FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Mixed Answers Given to Question On Turkey Outlook

By DAVID MARTIN
Feedstuffs Special Correspondent

HOT SPRINGS, ARK. — What is ahead for the turkey industry in 1961?

This was the leading question on the minds and lips of producers, feed men, hatchery operators and integrators attending the 11th annual meeting of the Arkansas Turkey Federation at the Arlington Hotel here Dec. 2-3.

(Turn to TURKEYS, page 104)

Use of Advisory Board To Review FDA-Trade Differences Proposed

WASHINGTON—Alteration of the Food Additives Amendment to embody the principle of an ad hoc advisory board reviewing "honest differences of opinion" between the Food and Drug Administration and industry regarding the Delaney clause was proposed here at the recent Food Law Institute meeting.

Dr. Richard S. Gordon, a member of the Manufacturing Chemists Assn.'s food additives committee and director of research, agricultural chemicals division, Monsanto Chemical Co., said an advisory panel such as the one he proposed "would be at least one step in the direction of a solution with which we in industry could live, and under which we could operate. . . ."

He referred to the efforts of the House Committee on Interstate and Foreign Commerce to incorporate

(Turn to ADVISORY BOARD, page 7)

Electronic Brain Knows Best

CHICAGO—Memo to feed company managers and college administrators: You can drop your scientifically trained nutritionists and replace them with modern electronic brains.

Well, not really, of course—but, it is interesting to note what happened in an experiment reported at the meeting of the American Society of Animal Production. It was a Canadian experiment in which an electronically computed early weaning ration for pigs was $26 per ton cheaper

(Turn to BRAIN, page 8)

AFMA Urges Adoption Of Model Sales Contract

CHICAGO—Voluntary adoption by feed manufacturers of all or parts of a Model Sales Contract developed by the Sales Executives Council of the American Feed Manufacturers Assn. was recommended this week by AFMA.

W. E. Glennon, AFMA president, noted the significant amount of feed sold by contract and stated, "It is in the best interest of feeder, dealer and manufacturer that a contract be used which clearly specifies the rights and responsibilities of all parties. Uniformity of contracts is also desirable for both buyer and seller."

Mr. Glennon said the Model Sales Contract was carefully checked by well-qualified legal counsel and is recommended for trade use by both AFMA's Sales Executives Council and its board of directors. He expressed the hope that the model contract will be voluntarily adopted by all feed manufacturers whether or not they are members of AFMA.

Statements from Foreword

The foreword to the model contract, published by AFMA in a four-page

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Feeding Barley to Cattle Assumes 'Industry' Proportions in Northwest

By JAMES E. SHARON
Feedstuffs Staff

FARGO—Cattle feeding, with barley the main ingredient, has assumed the proportions of a "statewide industrial development" project in North Dakota. The concept is being pushed by just about everyone involved in any way in the state, with the same enthusiasm also evident in northwestern Minnesota.

The most recent boost for this new "industry" came this week when more than 500 persons turned out in subzero weather for a special Feeder Day in Fargo. Sponsored by the North Dakota Farm Bureau, in cooperation with North Dakota State University, chambers of commerce and others, the event included a tour of the new Animal Nutrition Center at the university, where 26 pens of feeder calves have just been started on another round of various barley or roughage trials; an open house at the new 500-head-a-day Siouxland Dressed Beef Packing Plant; inspection of the Gold Label Feed Co.'s new steam-rolled barley equipment, and a feeder clinic at the West Fargo high school.

Here are just a few of the high-

(Turn to BARLEY, page 101)

Demurrage Hike Proposal Heard

By F. C. BISSON
Feedstuffs Special Writer

CHICAGO—A three-day hearing on a controversial proposal for a sharp increase in box car demurrage charges came to a close here this week. It was held in the Palmer House before the special demurrage committee, Association of American Railroads.

Rail lines have proposed a 50% boost in demurrage charges, and wide-spread opposition has resulted. This was evidenced by a heavy hearing attendance of some 200 persons

(Turn to DEMURRAGE, page 8)

W. R. Archer, Feed Firm Head, Dies

HOUSTON — William R. Archer, 72, president and chairman of the board of Uncle Johnny Feed Mills, died of a heart ailment Dec. 3 at Hermann Hospital here. Mr. Archer, an early leader in the formula feed industry, was well known in the trade.

Mr. Archer, a native of New Iberia, La., came to Houston after World

(Turn to DEATH, page 104)

Major Ingredient Prices Stimulated By Heavier Feeding

By FRED E. TUNKS
Feedstuffs Staff

Although trade in feed ingredients was reported to be spotty, the average price for feedstuffs was $1.50 ton higher at main U.S. markets during the week ended Dec. 6, according to U.S. Department of Agriculture data.

Colder weather gripped more firmly in the Midwest, but this colder trend was not nationwide. Weather remained open in some regions. Native grassland pastures, wheat fields and an abundance of homegrown feeds continued to keep demand down in some areas. In the cold belt, how-

(Turn to INGREDIENTS, page 8)

Colorado Company Plans Oregon Mill

ONTARIO, ORE.—Ontario will be the site of a new industry, a branch of the Colorado Milling & Elevator Co. of Denver, according to Don Grafe, chairman of the Ontario Chamber of Commerce industrial committee.

The new plant will be built at an estimated cost of $350,000. It will be a feed mill which will operate as a push-button plant, said to be the most modern west of Denver.

The plant will employ from 20 to 25.

North Carolina Feed Men Elect Officers

RALEIGH, N.C.—Members of the North Carolina Feed Manufacturers' Assn. have elected officers for the coming year. The group's annual meeting was held in conjunction with the annual Animal Nutrition Conference at North Carolina State College here Dec. 1-2.

Newly elected officers include: D. H. Taylor of Leco Feed Mills, Kinston, president; Jim Westall, Earle-Chesterfield Mill Co., Asheville, vice

(Turn to NORTH CAROLINA, page 101)

Quality Control Stressed at Tennessee Feed Men's Meeting

By THOMAS E. LETCH
Feedstuffs Staff

NASHVILLE, TENN.—The importance of quality control in feed manufacturing was one of the topics that received attention during the 11th annual convention of the Tennessee Feed Manufacturers Assn. held here Nov. 27-28. Approximately 100 persons registered and participated in the meeting which mixed social activities with an educational program.

Among the speakers were Clyde Cathey, director, Division of Feeds, Seeds and Fertilizers, Tennessee Department of Agriculture; W. D. Hudson, Jr., Cumberland Milling Co., Clarksville, Tenn.; J. G. Johnston, Security Mills, Inc., Knoxville; Dr. William D. Bishop, leader, agriculture program, Agricultural Extension Service, University of Tennessee; Dr. H. Randall Bryant, technical director, Southeastern Region, American Cyanamid Co., Atlanta; Howard Werthan, vice president, Werthan Bag Corp., Nashville; Rudy Langston, president, Langston Bag Co., Memphis; Samuel Alfend, director, Cincinnati district, Food & Drug Administration; Eugene Holman, state chemist, and Glenn Mowery, principal chemist, both with the Tennessee Department of Agriculture.

Mr. Cathey, Mr. Hudson and Mr.

(Turn to TENNESSEE, page 105)

FEEDSTUFFS *Features This Week*

SWINE NUTRITION—A summary of papers given at the American Society of Animal Production is presented on **page 10.**

FINANCIAL MANAGEMENT—The importance of good financial management in the success of a retail feed business is told on **page 22.**

FINES BENEFICIAL—Data presented suggests that some 'fines' in a pelleted broiler feed are beneficial. **Page 30.**

TRACE ELEMENTS—The necessity for proper balance of trace elements and macroelements is stressed in an article on **page 36.**

FDA INSPECTIONS—Feed men are advised on how to be prepared for an FDA inspection. **Page 52.**

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The regional circulation of this issue is concentrated in the southeastern states

Top of the Hopper

WHAT NEW FARM PROGRAMS will be proposed, debated and enacted next year? What approaches will the new administration, with a new secretary of agriculture, take in running the farm program? Questions like these hold a lot of interest for feed men—in many cases a very definite pocketbook interest as they attempt to plan marketing and purchasing programs. Not a great deal of speculation on these questions and related ones has been coming out of Washington since the election din has ceased, and industry planners are anxious to learn what might be in the wind.

Decisions likely to be made by the new Congress and administration in the agricultural field could affect a whole spectrum of industry activities, from price support prospects for turkeys to methods of handling the grain surplus.

The industry probably will be dealing with a lot of unknowns for some time to come. Meanwhile, some thought could well be devoted to a few observations of people, important in the farm program picture, which indicate the formidable range of ideas that prevail in different quarters.

Charles B. Shuman, president of the American Farm Bureau Federation, for example, says that farmers, by their vote in the election, rejected proposals for increased government intervention and subsidy in agriculture. "They have clearly demonstrated that their votes are not for sale to the highest bidder because they know that government price fixing and supply control mean lower, not better, farm income. This election should end for all time the fiction that farmers want more government regulation and price determination in their business."

MEANWHILE, SEN. HERMAN TALMADGE (D., Ga.), a member of the Senate Agricultural Committee, told Farm Bureau members in Georgia that the next Congress "has a mandate to devise and enact a new national farm program." None of the proposals made during the campaign "envisions the bold, front-door approach which the farm crisis demands," he said.

His bill, which he plans to introduce in January, would eliminate acreage controls and government loans and instead assign to each farmer a domestic product quota, expressed in terms of pounds, bushels, bales and other appropriate units of measure. The quota, he explained, would be the same percentage of the previous year's national consumption of basic commodities as the farmer's average annual production bears to the total national average production. The farmer would market what he produced and would be guaranteed the difference between the price he received for his domestic quota and 100% of parity. Also, no farmer would be allowed to receive more than $12,500 each year in government payments, and payments would be prohibited to contract farmers and to farmers whose families have total non-farm income of more than $5,000 a year, he explained.

Sen. Talmadge, under his proposal, also would permit a farmer to put land into conservation reserve and obtain from the secretary of agriculture a certificate entitling him to sell the equivalent of his quota from surplus stocks held by the government. No compensatory payments would be paid on such sales as the farmers would have, in effect, received such payments in eliminating the cost of growing their shares of the domestic market, he explained. "Under such an arrangement existing commodities would be substituted unit for unit for assigned quotas which would assure against any disruption of normal trade channels," he said.

AND STILL ANOTHER voice, that of Dr. Karl Brandt, a member of the President's Council of Economic Advisors (the present President, that is),

(Turn to **TOP OF THE HOPPER**, page 101)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Gradual improvement in formula feed sales was more pronounced this week—especially in northern regions of the U.S. This week's business growth reflected greatly increased demand for cattle and hog feeds, mainly the result of wintry weather—and, in some instances, a slowdown in the feeding of plentiful corn.

Formula feed price increases followed much stronger ingredient markets.

Rising corn prices and a fairly steady hog market resulted in a downward turn in the hog-corn ratio, the first in many weeks. The ratio, based on Chicago prices, slipped 1 point to 18.6. But it still was 7.4 better than a year earlier.

The wholesale feedstuff price index, according to the U.S. Department of Agriculture, advanced 2.2 points to 72.8 this week, compared with 80.5 a year earlier.

Up 2.4 points to 59 was the feed-grain index, as against 63.3 the comparable week last year. (Feed markets in detail on pages 102-104.)

Southwest

Formula feed business in the Southwest was reported somewhat better this week with most manufacturers operating a full five-day schedule. Colder weather has been a stimulus to the improved business but a lack of snow covering over most of this area is holding back heavy range feeding as wheat pastures have been excellent.

Price lists are all higher for the week. Feed grain prices are up. Major ingredient items, mainly soybean meal and millfeeds, are sharply higher for the week.

Hog feed sales, principally concentrates, are moving well and some trade sources report a fair movement of pig feeds. Broiler feeds are expanding their volume and are expected to improve. Integrated poultry programs are lending good business to mixers connected with this type of feeding.

Northwest

Reports from feed manufacturers—more enthusiastic than in weeks, even months past—tell the story that formula feeds "are starting to move in real good volume" in the Northwest.

Though this week's business was, in general, up considerably from last week's, comparisons by individual manufacturers of current sales in relation to the corresponding week a year ago were quite variable. Reports ranged from "much better than a year ago" to "still not quite as good as a year ago."

With minor exceptions, northwestern manufacturers have had to run their mills more hours per day or add a shift. A representative of one firm said most of its mills previously on a 16-hour day were now working 20 hours. And most mills with two shifts before have three going now. Another firm said it hadn't gone to Saturday work yet, but had added another hour to each of its two 8-hour shifts.

Most manufacturers reporting this week said beef cattle feeds, dairy feeds and hog feeds were accounting for most of the sales volume. Cattle feeds booked earlier in the season are now being ordered out in many and big shipments. Poultry feeds were reported to be dragging and that's no surprise since this is the lull before new turkey crops and new layer and broiler flocks.

A sobering observation by a manufacturer of livestock feeds was that he had not yet seen the pickup in demand expected. It was his opinion that ingredient and feed inventories were high because of low prices in past weeks.

He said December had been "quiet" so far but he was optimistic "over the long pull."

Low soybean oil meal prices, he said, had prompted some cattle feeders to buy the meal itself instead of mixed feed.

Another factor preventing current business from growing as fast as it might is the wet corn situation. Ag college economists have verified feed men's thinking that much of the 1960 crop is too wet to qualify for price support loans. Poor-quality, high-moisture corn is cheap and it is being fed freely and more carelessly than higher priced, drier corn.

The U.S. Department of Agriculture says the average price for feedstuffs was up about $1.50 this week, so formula feed prices are headed higher, too. Soybean oil meal, millfeeds and animal proteins showed major advances since a week ago.

Northeast

The severe blizzard that swept through this region failed to stimulate demand for formula feeds and sales were steady to slightly lower. Temperatures turned upward after the storm and once again winter receded from New York, Pennsylvania and the New England states. Although running time wasn't cut, one spokesman said, "orders weren't as numerous as they had been."

Egg prices weakened a little in the East and the poultry market was "no good." Broiler prices slipped ½-1¢ lb. It was not known whether the downturn pointed to slower sales for the rest of the year.

Dairy feeds and egg mashes constituted the bulk of the sales tonnage, with quite a drop off from them to turnover in turkey, broiler and hog feeds.

After the first of the year chick starter feeds should begin to move but the initial volume won't amount to much.

There were some wide price swings in the ingredient market during the week.

Central States

Manufacturers of commercial mixed feeds seemed to have been imbued with considerably more optimism this week with respect to having "turned the corner" after a six- or eight-week "spell" of uncertainty and indecision as to whether demand was going to remain quiet or become even more so. Demand has "perked up" to a fair degree and the first of the real winter months started out in a more auspicious manner than any of the preceding three months.

Mixers were much encouraged by the fact that feed is being ordered out for immediate, or at the worst, for prompt shipment, thereby confirming what everyone in the trade had been rather certain of with re-

(Turn to **MARKETS**, page 107)

Peter Hand

DOWN ON THE FARM

To help you produce better feeds, Peter Hand Research Farm conducts thousands of feeding experiments on poultry, swine and cattle. Latest scientific developments —vitamins, antibiotics and additives—are evaluated.

New formulations are tested under every-day farm conditions before they are recommended to feed manufacturers. The farm is comprised of 450 acres and more than a dozen buildings.

Scientists with specialized experience in poultry and livestock nutrition direct all work at the farm. For the answer to any specific feed problem, look for the answer *first* from Peter Hand research.

Continuous studies are made to help improve basic formulas and feeding plans. Consider the Peter Hand Foundation as part of *your own* research program. Find out how—write for the facts.

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Egg Set 25% Above Year Ago Figure

SALISBURY, MD. — Hatcherymen across the nation set 44,121,000 broiler eggs last week. This was a 25% increase over the set just a year ago.

Last week's national set was 1% above the previous week. Such a large jump over last year's figure is somewhat misleading. A year ago, the egg set dropped 12% below normal.

Settings last week were up from the previous week in 18 of 22 states. States with sizeable increases include North Carolina, Texas, Mississippi, Pennsylvania, and Indiana.

Chick placements in the 22 states totaled 30,546,000. This was 3% above the previous week and 6% above the corresponding week a year ago. Increases were reported for 15 states compared with the previous week. States showing appreciable increases include Texas, California, Mississippi, and Indiana.

Broiler prices in Delmarva held steady last week. The average price paid on the farm was 15.50¢, compared to 15.51¢ the week before. For one of the few times during 1960, last week's price was below the price paid the same week of 1959. A year ago the price was 17.45¢.

Everything seemed favorable for the broiler grower in Delmarva during the month of November except the price of chicks. Chick prices at $13 per hundred were 18% more than November, 1959. On the other hand, growers received an average of 16.5¢ lb. compared with 15¢ for November, 1959, or a 10% increase. Feed prices during November averaged $4.48 cwt., 4% less than 1959.

Air Broiler Problems At Service Clinic

DARDANELLE, ARK. — Winter broiler production problems received special emphasis at a recent broiler clinic conducted by Arkansas Valley Industries, Inc., Dardanelle, and Dawe's Laboratories, Inc., Chicago, for AVI broiler servicemen.

In addition to bringing AVI's service personnel up-to-date on the latest developments in broiler production, the clinic featured practical demonstrations on how to handle on-the-spot broiler problems. Dr. Clifford Treat, AVI nutritionist, introduced his organization's new winter broiler feeding program.

S. D. Formica, nutritionist for Dawe's, pointed out the nutritional and management factors important to progress in the broiler industry. He also discussed the basic factors affecting condemnations.

In commenting on the over-all objective of the clinic, S. D. Mitchell, AVI executive vice president, said: "By attacking broiler problems from every possible direction, and through the use of our new winter broiler program, we feel certain that we can increase our broiler production efficiency during the coming winter months."

Leo Cook Co. to Handle CCC Trace Minerals

QUINCY, ILL.—The Calcium Carbonate Co. has announced the appointment of the Leo Cook Co., Portland, Ore., as representative in the sale of CCC Trace Mineral Premixes to feed manufacturers in the Pacific Northwest.

Warehouse stocks are maintained in Portland, Spokane and Seattle.

The products handled by the Cook company will include CCC All-Purpose Trace Mineral Premix, available with high and low levels of zinc; Trace Mineral Premix Regular, designed primarily for cattle, sheep and other four-footed animals, and Trace Mineral Premix with 10% Zinc, for certain poultry and swine feeds.

New Coccidiostat Cleared for Use with Low-Level Antibiotics

RAHWAY, N.J. — "Amprol," the new Merck coccidiostat, has now been cleared for use in poultry feeds containing growth-promoting levels of the antibiotics penicillin and streptomycin, according to James E. McCabe, agricultural products director of Merck Chemical Division.

Amprol may now be used in feeds containing the growth-promoting levels of at least 4 gm. of penicillin or 30 gm. of streptomycin, Mr. McCabe pointed out. It may also be used with a combination of both as long as the minimum level of one antibiotic or the other is present and the combination of the two does not exceed a total of 50 gm.

Applications for the use of the coccidiostat with growth-promoting levels of chlortetracycline, oxytetracycline and bacitracin are pending, as are applications for its use with therapeutic levels of antibiotics.

The new food additive order issued by the Food and Drug Administration will permit use of Amprol in rations with the specified antibiotics for one-day-old chicks to broilers four days before marketing and processing.

Mr. McCabe said that Merck will assist feed manufacturers in preparing FDA Antibiotic Form 10, which must be filed with FDA before a feed containing Amprol and either penicillin or streptomycin may be sold.

Referring to antibiotic use with Amprol, Mr. McCabe noted that the company's application for use with antibiotics at high levels is pending. "Our tests indicate that Amprol is compatible with antibiotics at high levels," he said.

Under the current order, it was noted, the coccidiostat may be used with growth-promoting levels of either penicillin or streptomycin, or combinations may be used. These provisions, Mr. McCabe said, permit use of Amprol with combinations like Pro-Strep, for example, when the recommended growth-promoting levels are followed.

The announcement this week also included a report by Mr. McCabe that researchers at the University of Maryland and the Merck Branchburg Farm have found feed conversion

(Turn to CLEARANCE, page 105)

California Co-op Builds New Mill

MORGAN HILL, CAL.—The Hayward Poultry Producers Assn. has completed a new high speed feed production unit at its Morgan Hill location.

The Morgan Hill Co-op Feed Mill now has a capacity of 16 tons of formula feed per hour. Facilities include grinding machinery, a 2-ton mixer, bulk concentrate ingredient tanks, a pellet mill, a crumbler and sacking machinery. The mill is automatically controlled from an electronic control board.

Total bulk storage has been increased to more than 1,000 tons. New unloading facilities have a 500 ton per hour capacity.

The Morgan Hill Co-op Mill serves 100 farmer-owners in Santa Clara and San Benito counties.

New Mill to Open

CHESTER, MONT.—Operations at the new Anderson-Brown feed mill here began recently with a final check of machinery and equipment, company officials report.

Ray Yort of the company's Great Falls office said full scale operations would begin soon. A grand opening and public demonstration are slated in the near future. Construction of the plant was begun early last summer. The building is annexed to the present Anderson-Brown elevator.

'APPREHENSION CAUSED BY TURKEY REPORTS'

MT. MORRIS, ILL.—The National Turkey Federation, Mt. Morris, says government reports which bear out expectations for a larger turkey crop in 1961 "are causing considerable apprehension."

Outlook report figures "are indicative of the probable direction of the change in the size of the crop," the federation says in a bulletin, "but are greater than the probable change in magnitude. Industry leaders are urging producers to study the situation carefully and make their plans accordingly."

Bioferm Corp. Sold To International Minerals & Chemical

CHICAGO — Announcement has been made here that the Bioferm Corp., a firm in research, development and production in the microbiological fermentation field, will become part of International Minerals & Chemical Corp.

T. M. Ware, president of IMC, said the move would "widen IMC's activities in the fermentation field, provide new opportunities in the agricultural market through insecticides and feed supplements, and open completely new avenues of diversification."

Bioferm, which synthesizes chemicals through fermentation, recently gained prominence for a breakthrough in pesticides with its discovery and development of a microbial insecticide (Thuricide) which is as effective as poisonous chemical insecticides but harmless to humans, other warm-blooded animals, birds, bees and fish, the announcement said.

The company is a producer of vitamin B_{12}, used both as a feed ingredient and a pharmaceutical, and has processes for antibiotics for the feed industry.

IMC has ties to the agricultural industry as a producer of plant food ingredients and the feed ingredient dicalcium phosphate.

George Gelman, Bioferm president, said the two companies "will mesh together naturally and well, with mutual benefits."

"Bioferm will have much greater opportunity to capitalize on its most promising development results. At the same time, we can provide great help to IMC's current and long-range programs by the application of our fermentation skills and facilities," he said.

Officials of the two companies said that final terms of the stock transaction agreement by which IMC will acquire Bioferm are still being worked out, but that negotiations are expected to be completed by the end of the year. Bioferm is owned jointly by Mr. Gelman and Jerry M. Sudarsky, executive vice president and treasurer.

Bioferm's plant in Wasco, Cal., will continue without change as an operating unit under the Bioferm name, according to George B. Hamilton, vice president of IMC's Amino Division, of which Bioferm will be a part.

MILL FOR SALE

LOS ANGELES—The former Poultrymen's Cooperative Assn. feed mill on Mirasol Street in the heart of the industrial district here is for sale. The mill has 41 grain storage bins holding 45,000 bu. and 14 concrete grain storage tanks holding 162,000 bu. Total floor space, including upper floors of the six-story mill, is 122,000 sq. ft. First floor space totals 72,000 sq. ft. and there are 40,000 sq. ft. of paved parking space. The plant has a 2,500 lb. elevator. It is situated on a Union Pacific railroad siding.

Honeggers' Buys Thuro Bilt Plant

FAIRBURY, ILL. — Honeggers' & Co. has purchased the manufacturing plant of Thuro Bilt Products located in Fairbury, E. F. Dickey, president of Honeggers' & Co., and Dean Koehl, president of Thuro Bilt Products, announced in a joint release. Purchase price was not announced.

Honeggers' states that the new plant acquisition will be used to enlarge and expand its prefabricated farm buildings business.

The Thuro Bilt plant was built in the early 1950's to manufacture prefabricated farm buildings for the Honegger dealer organization. It later branched off into the manufacture of prefabricated homes. When Honeggers' bought the Green Gables manufacturing plant at Onawa, Iowa, the Fairbury firm devoted full time to prefab home business.

According to Honegger officials, the farm buildings sales program is to be completely revised and expanded with the new plant servicing dealers east of the Mississippi River. Honeggers' Green Gables plant will continue to service Iowa, Missouri, Kansas, Nebraska, South Dakota and Minnesota.

'Expansion' Topic for Farmers Union Event

ST. PAUL — The expansion program of the Farmers Union Grain Terminal Assn., including the construction of two semi-automated feed plants, is expected to get considerable attention from delegates attending the group's annual convention here.

In his annual report Dec. 12, M. W. Thatcher, general manager of the big grain, feed and seed cooperative, will focus the attention of delegates on the $9 million expansion. Stated purpose of the expansion is to weld grain marketing, feed manufacture and soybean and flaxseed processing into "one single cooperative operation that would give Upper Midwest farmers a larger voice in the marketing of their own products."

Expansion by Farmers Union GTA has included: Purchase of the Honeymead Products Co. soybean processing plant at Mankato, Minn., the largest unit of its kind in the world; purchase of the Commander line of 38 elevators and four subterminals in southern Minnesota; construction of two feed plants at Edgeley, N.D., and Ellis, S.D., and improvement of the GTA Head of the Lakes terminal elevator at Superior, Wis.

Wyeth Asks FDA for Tranquilizer Clearance

WASHINGTON — The Food and Drug Administration has been asked by Wyeth Laboratories, Philadelphia, to clear use of a tranquilizer in feed.

FDA announced that Wyeth has filed a food additive petition proposing issuance of a regulation permitting the safe use of promazine hydrochloride (4 gm. per pound of feed base) in animal feed as a tranquilizer.

Fire Damages Mill

ALBERT LEA, MINN.—Donovan's, Inc., feed mill here was damaged by fire which broke out in the pelleting and main mixing room Dec. 3.

Total estimate of damage was still being figured Dec. 9 as work had begun on removing feed mill equipment from the fire-damaged elevator structure used by the firm for manufacture of its Donlea feed. It was reported that one wall of the elevator suffered considerable damage in the blaze and corn in one bin of the elevator was scorched. There was also some water damage.

A spokesman for the firm said that part of the firm's feed is being produced by an Owatonna, Minn., mill and that the company is able to do some of its own mixing.

There's no easy way to prevent blackhead...

but there is a best way!

Of all antiblackhead drugs on the market today, only HEPZIDE gives you the assurance of efficacy, safety *and* palatability. Readily consumed by young, growing and mature birds, it affords protection from brooding to marketing—without interfering with growth, sexual development, egg production, fertility or hatchability.

No, there's no easy way to prevent blackhead. But with good management and good feeds containing HEPZIDE, you'll find *there is a best way.*

- For continuing protection against blackhead, feeds medicated with HEPZIDE furnish the safest and most effective program.
- For blackhead complicated by coccidiosis, use the versatile turkey coccidiostat—S.Q.®—followed by feeds fortified with HEPZIDE.
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Overseas Markets, Nutrition Progress Featured at Arkansas Turkey Meeting

By DAVID MARTIN
Feedstuffs Special Writer

HOT SPRINGS, ARK.—The 11th annual meeting and show of the Arkansas Turkey Federation was held here Dec. 2-3, and convention delegates heard good news about expanding overseas markets and possible important new developments in nutrition.

Arkansas Sen. J. William Fulbright, chairman of the Senate Foreign Relations Committee and principal speaker at the annual banquet at the Arlington Hotel, reported that overseas markets for American poultry products are increasing rapidly.

And Dr. E. L. Stephenson, Fayetteville, University of Arkansas nutritionist, predicted that major new discoveries will soon be made concerning proteins, amino acids and related problems.

The federation also:

—Named a new slate of officers.

—Applauded an idea that, with proper marketing techniques, the American economy can absorb 100,000,000 turkeys annually.

—Heard a report on major turkey diseases.

—Listened to an outline of the work of the International Trade Development Council.

E. E. Bowen, Bowen's Turkey Farm, Fayetteville, was elected president of the federation, succeeding Gene George, George's Feeds, Springdale.

Other new officers included Jack Hayes, Nashville, vice president; Lowell Lankford, Little Rock, extension poultryman, secretary, and John M. Haid, Little Rock, publicity director.

Roy Ritter, Springdale, and Harold Dodgen, Ozark, were elected representatives to the National Turkey Federation.

Board Members

Seven new directors were elected. They were Ed Harms, Russellville; Ted Cameron, Hot Springs; Tom Kinslow, Russellville; Vernon Magness, Little Rock; Dale Parsons, Springdale; Tom Haggan, Springdale, and Clark Aulsberry, Hot Springs.

In his speech, Sen. Fulbright said that until recently the poultry industry did not need any export business.

"However, it has now become important to West Germany, France and Italy, where there are good markets," he said.

The senator, who has been a leader in bringing the importance of poultry exports to government officials, said turkey exports will help stimulate foreign trade. He said this was a healthy situation, because the poultry industry is not subsidized like other commodities.

Noting that the per capita consumption of poultry has doubled and that the income from poultry has tripled in recent years, he said:

"One couldn't find an equal in any other commodity derived from the soil."

He pointed to increased exports as an example. He said that during the period from April to December of 1959, some 6 million pounds of poultry products were exported—principally to Western Europe—and that in the same period of 1960, more than 9 million pounds were shipped overseas.

"Some people may complain about foreign aid," he said, "but the substantial increase of American poultry exports is one of the dividends growing from the Marshall Plan."

While in Europe recently, Sen. Fulbright discussed poultry imports with a number of officials.

The convention adopted a resolution praising him for his work in helping to open up new markets abroad for American poultry.

Amino Acids

In making his prediction of important new advances in the field of poultry nutrition, Dr. Stephenson touched on a subject close to the heart of every producer: His pocketbook.

Dr. Stephenson said he believes feed costs can be lowered if producers can limit the amount of amino acids the bird has to break down.

He predicted that amino acids will soon be manufactured in sufficient quantity so that feed men can afford to use them.

"We can use them to reduce protein requirements," he forecast. "As they become more available, we can reduce our protein requirements and obtain faster and more efficient gains."

Poultrymen took this to also mean cheaper gains. Said the nutritionist: "I believe the term protein will soon become as outmoded as the term B vitamin."

He pointed out that nutritionists, feed men and industry officials now think of the "B" vitamin as being composed of a number of vitamins in the B complex group. He said that there are some 23 different kinds of amino acids in protein.

"Companies are now attempting to make amino acids at prices feed men can pay," he told an attentive audience.

"When we limit the amount of amino acids the bird has to break

(Turn to ARKANSAS, page 106)

NEW OFFICERS — New officers of the National Renderers Assn. elected at its recent convention (Feedstuffs, Nov. 19) in Dallas, are: Seated, Myer O. Sigal, president, and Elizabeth M. Stecher, secretary-treasurer; and standing, left to right, William R. Malloy, second vice president; John H. Haugh, first vice president, and John J. Hamel, Jr., executive director.

Clearance on Use of Dried Algae Meal to Enhance Color Asked

WASHINGTON — The Grain Processing Corp. has filed a petition with the Food and Drug Administration proposing the issuance of a food additive regulation on the use of dried algae meal in feed, according to an FDA announcement in the Federal Register.

The proposal calls for dried algae meal to be used in chicken feed to enhance the color of egg yolks and broilers.

FDA, presumably looking to possible coverage of the product under the new color additives amendment, said: "The filing of this petition for the use of the above identified substance as a food additive is without prejudice to later consideration under the provisions of the color additives amendments of 1960 . . ."

Broiler-Feed Ratio Steady; Others Up

WASHINGTON — Farm commodity-feed price ratios were generally more favorable in November than in October or in November of last year. The broiler-feed ratio remained steady with a month earlier at 3.5 but was up from 3.2 of a year earlier. The butterfat-feed ratio was up to 25.8 from 25.7 of a month earlier and down from 26.0 of the previous year.

Most favorable of the reports was in eggs, where the ratio is 14.2 as compared with 13.3 a month earlier and 9.5 a year before and hogs where the ratio moved up to 19.2 from 17.1 in October and 12.4 a year earlier. (See table for detailed comparisons.)

The index of prices received by farmers rose 1% during the month ended Nov. 15 to 241% of its 1910-14 average, the U.S. Department of Agriculture reports. The November, 1959 figure stood at 231%. Primarily responsible for the increase were higher prices for eggs, beef cattle and milk. A sharp drop in corn prices together with moderate declines for cotton and hogs were partially offsetting.

The index of prices paid by farmers for farm production items remained unchanged from October at 297. Higher prices were paid for feeder and replacement livestock but lower prices were paid for feed and farm supplies during the month. Prices paid by farmers for feed continued the downward course begun in April to the 188% level, 2% below October and 4% below last November and the lowest since April, 1946.

Feed: Average Price Paid by Farmers, U.S., Nov. 15, 1960, with Comparisons

Commodity and unit	Nov. 15, 1959	Oct. 15, 1960	Nov. 15, 1960
	dollars		
Alfalfa hay, baled, ton..	31.1	31.0	31.6
Other hay, baled ton ...	27.9	29.0	30.0
Cottonseed meal, 41%, cwt.	4.05	3.96	3.96
Soybean meal, 44%, cwt.	4.19	3.96	3.85
Linseed meal, cwt.	4.81	...	4.21
Meat scrap, cwt.	4.98	4.76	4.70
Tankage, cwt.	5.03	...	4.77
Bran, cwt.	2.82	2.77	2.84
Middlings, cwt.	2.95	2.85	2.89
Corn meal, cwt.	3.07	3.08	3.04
Corn gluten, cwt.	3.21	...	3.24
Scratch grain, cwt.	*3.83	3.81	3.78
Laying mash, cwt.	*4.33	4.26	4.22
Poultry ration cost, cwt..	3.31	3.27	3.21
Broiler growing mash, cwt.	4.72	4.55	4.51
Turkey growing mash, cwt.	4.66	4.56	4.52
Chick starter mash, cwt..	*4.83	4.71	4.68
Mixed dairy feed, under 29% protein, cwt.	3.68	3.60	3.61
Mixed dairy feed, 29% and over	4.44	4.36	4.34
Mixed hog feed, 14 to 18%, cwt.	4.03	3.95	3.90
Mixed hog feed, over 29%, cwt.	5.28	5.08	5.00
Cattle feed, 30% and over, cwt.	4.33	4.20	4.21
Stock salt, cwt.	1.61	...	1.62
	(1910-14=100)		
Feed, prices paid by farmers	195	191	188

*Revised.

Texas Firm Builds Push-Button Mill

SUGAR LAND, TEXAS — Construction of a $350,000 push-button feed mill near here has been announced by Thomas L. James, president of Sugarland Industries, Inc.

The new mill with a 100 ton per day capacity is to be completed in the summer of 1961. Operation of the mill will be controlled from a single panel board. Electronic controls will enable the operator to select from 26 storage bins the quantity and ingredient needed.

The installation will include a 70 by 122 ft. warehouse and mill unit with an ingredient distribution tower the height of a nine story building. In addition, storage facilities for all types of standard feed mixes will be constructed with a capacity of 30,000 100 lb. bags of feed.

"The plant has been designed for fast and convenient customer service," Mr. James said. "Any customer can phone us an order for his special feed formula, and have his order

(Turn to TEXAS FIRM, page 106)

Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
November, 1960	3.7	3.6	4.5	3.9	3.6	3.9	4.1	3.5	3.4	2.7
October, 1960	3.5	3.6	4.7	3.9	3.4	3.8	3.9	3.6	3.4	2.9
November, 1959	2.5	3.3	3.7	2.9	2.3	3.4	3.5	3.0	3.3	2.5
Average (1949-58)	5.5									
Average (Nov., 1949-58)..	5.0									
Broilers:										
November, 1960	3.5	3.8	4.6	3.7	3.8	3.4	3.3	3.5	3.9	3.8
October, 1960	3.5	3.8	4.5	3.7	3.8	3.4	3.3	3.5	3.9	3.9
November, 1959	3.2	3.4	4.3	3.4	3.4	3.0	2.9	3.1	3.6	3.6
TURKEY-FEED—										
November, 1960	8.0	8.2	9.1	8.6	9.4	7.2	8.1	8.0	7.9	7.0
October, 1960	7.9	8.2	8.6	8.2	9.4	7.2	7.8	7.9	7.4	6.9
November, 1959	7.5	6.7	8.1	7.6	8.7	7.2	7.5	7.5	7.3	6.5
Average (1949-58)	8.4									
Average (Nov., 1949-58) ..	8.4									
EGG-FEED—										
November, 1960	14.2	15.7	15.3	14.3	14.4	14.4	14.9	14.3	13.4	11.6
October, 1960	13.3	14.7	14.7	13.2	12.7	13.8	13.7	13.4	12.4	11.3
November, 1959	9.5	11.0	10.5	8.7	8.1	10.6	11.7	10.8	10.7	7.8
Average (1949-58)	11.1									
Average (Nov., 1949-58) ..	12.5									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
November, 1960	1.61	1.54	1.61	1.73	1.69	1.73	1.49
October, 1960	1.59	1.54	1.56	1.72	1.70	1.70	1.47
November, 1959	1.60	1.61	1.52	1.70	1.73	1.77	1.49
Average (1949-58)	1.30						
Average (Nov., 1949-58) ..	1.49						
BUTTERFAT-FEED—							
November, 1960	25.8	...	21.3	28.5	...	17.6	18.7
October, 1960	25.7	...	21.0	28.4	...	17.7	19.0
November, 1959	26.0	...	21.1	28.9	...	17.5	19.0
Average (1949-58)	22.2						
Average (Nov., 1949-58) ..	23.3						

	U.S.	North Cent.
HOG-CORN—		
November, 1960	19.2	20.5
October, 1960	17.1	17.7
November, 1959	12.4	12.6
Average (1949-58)	14.0	14.3
Average (Nov., 1949-58) ..	13.8	14.1

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Caroline, South Caroline, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

ADVISORY BOARD

(Continued from page 1)

within the framework of the color additives bill provisions calling for the formation of a scientific panel to review, on request, whether or not a material is a carcinogen.

Broader Scope

Dr. Gordon recommended broader application of a review panel's authority in connection with the Food Additives Amendment. He proposed that ad hoc committees be empowered to judge whether or not an article would be safe in its intended use.

Regarding the change in scope he had in mind, Dr. Gordon suggested "that the concept of the advisory panel should apply to the Food Additives Amendment," but "consideration probably should be given to extending the concept to cover all parts of the Food, Drug and Cosmetic Act.

". . . The scope of the panel proposed here is more consistent with the spirit of the Food Additives Amendment since it provides a more objective review of public hazard in terms of how a material is to be used. Such a panel . . . would in no way dilute or modify the Delaney language as it stands, but, rather, it would allow the administration to establish machinery for operating under what would have the potentiality of becoming a reasonable system, and would provide a statutory basis for enabling the Secretary (of Health, Education and Welfare) to make a fair evaluation of the scientific record as a whole."

Dr. Gordon said provisions calling for formation of a scientific review panel within the framework of the color additives bill were contained in a report developed by a special commission under the leadership of Dr. Kistiakowsky and delivered to President Eisenhower.

He reported also that Arthur Flemming, secretary of health, education and welfare, in a speech to the Manufacturing Chemists Assn. June 10, said he "favored such an advisory committee for the Food Additives Amendment, responding affirmatively to the recommendation concerning establishment of such a panel as proposed by the Kistiakowsky report."

Dr. Gordon said he hoped that "the differences that exist now between the color additives and food additives amendments will be speedily rectified. . . ."

He said it would be difficult to ask Congress to write legislation in the future to permit safe use at certain levels of materials that were possible carcinogens at higher levels. "It might even be very difficult to establish this for secondary or indirect carcinogens," he said, "but difficult or not, we must do something now to implement the much talked about rule of reason since, at present, the net effect is that FDA's interpretation of the Delaney Clause beclouds administration of the entire Food Additives Amendment by creating a climate of extrapolation and requirement for proof of a negative.

"As far as we in industry are concerned, we think that this problem would be alleviated by incorporating the concept of a scientific panel into the administration of the Food Additives Law, making it consistent with the provisions of the Color Additives Amendment. . . ."

Regarding the scope of the proposed ad hoc committee, Dr. Gordon said:

". . . It does not seem appropriate for scientists to have to deal with all possible extrapolations of a term which is sometimes very difficult to define. Rather, I suggest that in cases where an honest difference of opinion exists between FDA and a given petitioner, the scientific panel should be specifically charged to assist in the evaluation of the scientific evidence appropriate to the proposed use of the chemical in question, rendering an opinion on the safety of that use without being limited only to naming a series of events as 'carcinogenic'."

Considerations of Panel

Paraphrasing the Kistiakowsky report, Dr. Gordon said the scientific panel would consider, among other matters:

"1. Whether or not the test for carcinogens is appropriate and reasonable, whether the substance is or is not, in reality, carcinogenic as determined histopathologically or by other criteria and whether addition of the substance to agricultural products would result in a concentration of the material above the natural background level.

"2. Whether assay techniques would be appropriate to determine whether or not a specific carcinogen is present in food. It would also be the function of this panel to review from time to time its recommendations and to modify them in the light of new scientific knowledge. Further, the board would assume the responsibility of recommending to the Secretary of Health, Education and Welfare specific research problems to be undertaken to provide this necessary scientific data."

Dr. Gordon said he believes it should be up to the advisory panel "to decide for any material . . . whether or not there is a hazard concerned with the proposed use levels of the material.

"If we assume . . . that the panel would find that the materials . . . were not safe, then I think the panel should be empowered to find that it could not accept a tolerance of .3% of a particular emulsifier in bread or a specified amount of stilbestrol in beef or chicken.

"But, as I stress the converse again, I do not think that if the committee feels that stilbestrol is a safe additive for beef cattle, or that arsenicals are safe for poultry feed, it should be necessary for one to have to wait for legislative action to allow their use under controlled conditions, since the findings of the panel would be based essentially on the safety to the humans consuming the foods involved.

"I think there is a general agreement among scientists that one cannot set a tolerance for an active carcinogen in food to be eaten for a lifetime. The problem is, rather, that what is included by the name carcinogen, is often difficult to define.

"The use of a scientific panel in this matter in conjunction with the Food Additives Amendment would do much to restore the climate in which the amendment was passed.

". . . Without the inclusion of the scientific panel, the absolute prohibition in the law regarding the use of substances causing cancer and the manner in which the law has been interpreted and applied by FDA, does not allow for objective review of scientific matters in terms of the perspective of human safety."

In Dr. Gordon's discussion which backgrounded the ad hoc advisory board proposal, he quoted statements made by Sen. Gordon Allott (R., Colo.) in connection with a Senate committee's study of the Delaney Amendment:

"I am concerned that some of the procedures established under this act (the amendment) may prove unworkable, and would hope that our committee and the distinguished chairman will follow the development of this program closely with a view to making any legislative corrections that appear necessary to insure its workability to deal effectively and expeditiously with the vast number of substances which will require administrative approval."

"Proof of a Negative"

Dr. Gordon commented, "The point is, people felt that the singling out of a specific clinical event might ultimately lead to a requirement for proof of a negative (that is, the demonstration that a chemical would not cause cancer—something which is logically impossible)."

He said it has been indicated that the inclusion of certain language in the Food Additives Amendment has led "to arbitrary extrapolations and semantic difficulties."

Speaking of the definition of carcinogen and the practicability of establishing a threshold value for the use of a possible carcinogen in food or feed, Dr. Gordon remarked to his institute audience:

"I think you will agree that in order to define a chemical agent as a carcinogen, a scientific judgment is necessary, based on the evidence of whether or not the material is capable of directly causing a carcinogenic event under a set of specified use conditions.

"As a scientist working in this field, I submit that in cases where the mechanism of carcinogenesis can be explained and the pharmacological conditions, under which secondary or tertiary effects would or would not occur, can be determined, then one should have no reason to feel that the agent would be a carcinogen or that tumors could result from lower levels of administration, if the agent at the lower level does not trigger the mechanism or create the imbalance. . . ."

Dr. Gordon said the point in his recounting legislative and administrative developments which have had a part in producing industry problems "is that in the 2½ years since the passage of the Food Additives Amendment, the climate that has been produced has been such as to hamstring what was essentially an excellent piece of legislation in the public interest."

PRIZE WINNER—The prize winning barrow at the International Live Stock Exposition purchased by Honeggers' & Co., Fairbury, Ill., is the center of attraction here. Behind, from the left, are: Bernard Ebbing, Waterloo, Iowa, judge for the event; Colleen Rae Callahan, Milford, Ill., who raised the pig, and E. F. Dickey, president of Honeggers'. Mr. Dickey's company paid a record $23 lb. for the animal.

Honeggers' Gives Prize Barrow Wide Display

FAIRBURY, ILL. — What does a feed company do if the grand champion barrow of the International Live Stock Exposition has been raised on its feed?

The prize barrow at this year's exposition in Chicago was fed on Honeggers' & Co. feed and here's what Honeggers' and E. F. Dickey, company president, have done and are doing:

Mr. Dickey bid a record $23 per pound or a total of $4,715 for the prize barrow and immediately renamed the animal "Mr. Pig Popper" for the feed used in raising the barrow (Feedstuffs, Dec. 3).

Then Honeggers' lined up an extensive tour for the prize pig. But, before leaving on the tour, "Mr. Pig Popper" made his television debut in Chicago and was the principal guest at a press reception in his honor at the Palmer House. Colleen Rae Callahan, Milford, Ill., the nine year old girl who raised the pig and showed him at the International, and her mother were on hand at the reception to answer questions, according to the feed company.

From Chicago the girl and the prize winning pig were flown to Milford where the mayor and president of the Civic Council presented the girl with a wristwatch on behalf of the city of Milford. Students at Colleen's school had been dismissed and were at the airport with placards to welcome her home. In spite of the excitement, "Mr. Pig Popper" reportedly seemed unimpressed as he lumbered from the airplane which was flown from Chicago by Mr. Dickey.

From Milford, "Mr. Pig Popper" went on to Fairbury for a general sales meeting of Honeggers' & Co. At the Honegger House restaurant he had a dinner of Pig Popper, shelled corn and mineral, while other patrons had to be satisfied with ham and beef. The manager of the restaurant said that while Honeggers' pig feed was not a regular item on the menu,

(Turn to BARROW, page 106)

Osborne McMillan Elects New President

MINNEAPOLIS — Cavour L. McMillan is the new president of Osborne McMillan Elevator Co. He was elected to the position at a special meeting of the company's board of directors.

Mr. McMillan, who succeeds his father, the late Howard I. McMillan, as president, is the grandson of the company's co-founder, John D. McMillan. He is the third member of the McMillan family to serve in this position.

Three other new officers were also elected at the special board meeting. Edward N. Osborne was elected board chairman and treasurer, Philip E. Paquette was named executive vice president and secretary, and Howard I. McMillan was made assistant secretary. No changes in other company officers were made.

Present members of the board of directors of the 73-year-old grain and feed firm include Edward M. Osborne, Philip E. Paquette, Cavour L. McMillan, Homer D. Wells and Gordon Murray.

Substantial Declines Noted in Egg Prices

Egg prices remained well above year-earlier levels this week, but continuation of a decline in large and medium values was apparent. Supplies were reported to be more than covering demand.

In New York's wholesale market, during the week ended Dec. 7, the price of large whites fell 3-4¢, and mediums dropped 7-8¢.

Chicago's Dec. 7 delivered price for large mixed was off about 2¢ from a week earlier, and a decline of 4½¢ was reported for medium mixed.

From Iowa it was reported that grade A large eggs dropped about 6¢ at farms and A smalls were off 1@2¢. Mediums were selling at about the same price as a week earlier.

Soybean Mill to Shut Down for Expansion

EAGLE GROVE, IOWA—The soybean plant of Boone Valley Cooperative Processing Assn. here will close down during February and March for completion of doubling the capacity of the unit, it was announced at the annual meeting of the cooperative.

The doubled output of the plant will be 400 tons per 24 hour day, according to Keith M. Voigt, manager.

Mr. Voigt also reported sales for the firm at the meeting. The sales figures were: $4,609,288.68, soybean division; $3,861,360.01, feed division, and $1,093,370.53, quality egg division.

Price Increase Noted in Oilseed Meal Futures

MEMPHIS, TENN.—A substantial price increase occurred in most oilseed meal futures on the Memphis Board of Trade during the past week.

This reflected an upturn in the cash article demand for much of the time, although business was easier at the close of the period.

Weakness in soybean oil a portion of the week was a factor in the rise. Prices were ahead of the week before, despite a decline in bulk solvent cottonseed oil meal the final two days and unrestricted soybean oil meal the last day.

Mixed feed business still was termed fair. However, the trade looks for improvement as winter weather spreads over the country.

Eastern Trunk Line soybean oil meal closed Dec. 6 $2@4.75 ton higher than on Nov. 29; unrestricted soybean oil meal $1@2.75 higher, and bulk solvent cottonseed oil meal 25¢ lower to 25¢ higher.

Two Iowa Firms Dissolve Merger

WEST BEND, IOWA — Davenport Elevator Co. anounced this week that it has sold its facilities at Hampton and Waterloo, Iowa, to Waterloo Mills Co.

Waterloo Mills merged with Davenport Elevator Co., a wholesale feed operation headquartered at West Bend, Sept. 1, 1959, and had been operated since that time as part of Davenport Elevator's operation. J. A. Olson, Davenport Elevator president, said the Waterloo firm is again operating the Waterloo location and Hampton branch. Effective date of the sale was Dec. 1.

Mr. Olson reported earlier (Feedstuffs, Nov. 19) that Davenport Elevator had sold its West Bend feed plant and grain elevator to West Bend Elevator Co., a cooperative.

Davenport Elevator will maintain its main office at West Bend, wholesale feed distributing points at Davenport, Des Moines and Ft. Dodge, Iowa, and retail points at Casey, West Bend and Algona, Iowa.

Higher Level of Ronnel in Cattle Feed Authorized

WASHINGTON — The Food and Drug Administration has announced an amendment of the food additives regulations to authorize an increase in the maximum level of ronnel, a systemic insecticide, in beef cattle feeds.

The action came on a petition filed by Dow Chemical Co., Midland, Mich.

The first FDA order on use of ronnel in feed to control cattle grubs was a result of a petition by Moorman Mfg. Co. The new order permits a higher level if the feeding time is shorter.

Under the new regulations, it is specified:

"The maximum quantity of the additive permitted to be used in or on the finished medicated feed shall not exceed:

"(1) 2,750 parts per million (0.275%) in feed which is to be fed to cattle continuously for 14 days; or

"(2) 6,000 parts per million (0.600%) in feed which is to be fed to cattle continuously for 7 days."

The regulations also were amended to provide for certain changes in regard to mixing and feeding directions, etc.

The feed is for beef cattle only and it is not to be fed within 60 days of slaughter.

EXECUTIVES KILLED

CLEVELAND—John J. Duffy, 35, president of the McClure & Wilder advertising agency, and Clay J. Donges, 42, president of Donges Aircraft Sales, Inc., were killed when the twin-engine plane they were flying, crashed in a residential area near here.

DEMURRAGE

(Continued from page 1)

who viewed the rate increase as a completely uncalled-for boost in the charge covering what the rail lines refer to as "undue detention of equipment" on the part of the grain and allied industries.

Represented were grain and processing industries that extend from New York and Boston, west to Colorado Springs, north to Grand Forks, N.D., and south to Houston, Texas.

Major mill and feed concerns represented at the hearing included General Mills, Pillsbury Co., Quaker Oats Co. and Ralston Purina Co. Dozens of smaller companies were represented, and every grain exchange from the Chicago Board of Trade, Minneapolis Grain Exchange on down to the Little Rock Grain Exchange and countless elevators had their top people at the hearing.

Railroads' Proposal

Briefly stated, here are the railroads' proposals:

(1) On cars subject to average agreement: Amend the tariff making the charge $6 per day (instead of $4 as at present) for each of the first four days, and $12 per day (instead of $8 as at present) for each subsequent day.

(2) On cars not subject to average agreement:

(a) Amend the tariffs, making the charge $6 per day (instead of $4 as at present) for each of the first four cancellable debits and $12 per day (instead of $8 as at present) for each subsequent debit;

(b) At the end of the calendar month, total applicable credits will be deducted from the total number of debits at the ratio of two credits for one debit. In no case shall more than eight credits be applied in cancellation of debits accruing on any one car, and

(c) In applying the above rule, when an odd number of credits is earned, one of such credits shall be disregarded in the computation.

The hearing might be called an exploratory one with the railroads turning loose these three trial balloons for target practice by the industries which, if the proposals should eventually be incorporated into the rail line published tariffs, would be saddled with an arbitrary 50% hike.

Dozens of oral presentations opposed to what the rails have in mind, and a foot-high stack of letters scoring the proposition, were made and filed with the special committee.

Among arguments presented was one which stressed that deterioration in rail service is becoming progressively worse (citing that it may take anywhere from 3 to 21 days now to move a car of grain or grain products from Minneapolis to Chicago) and, as a result, it is becoming increasingly difficult for industries to schedule their operations, so "undue detention of rolling stock" actually is greatly aggravated.

Spokesmen pointed out that as a result of "this deterioration in rail service to industries," much machinery and labor are idle for long periods because of there being no cars to either unload or load—when cars finally arrive, they are spotted in such profusion that demurrage is inevitable.

The charge was made that the railroads were many times responsible for "undue detention" which could easily be avoided if rail service was "up to par."

Another rail line proposal that caused harsh criticism from the industries was this: Instead of matching one credit against one debit, the railroads would devalue the credit to the extent of 50% but leave the debit unchanged at 100%. Furthermore, if a firm's credits add up to an odd instead of an even figure, it would have to toss the "extra" credit out the window.

The entire proposal, with special committee recommendations, must go through regular channels of submittal to directors of the Association of American Railroads. Any resultant tariff amendment recommendations made will have to be acted on by the various roads, and industries would later have an opportunity to fight any demurrage hikes before the Interstate Commerce Commission.

It is still a long way in the future before the matter will be settled.

INGREDIENTS

(Continued from page 1)

ever, feeders responded with increased buying.

Major price gains were reported for soybean oil meal, millfeeds and animal proteins.

Great influence on the upward turn of soybean oil meal came from a much stronger cash bean market. Chicago reported the price for No. 1 yellow soybeans at $2.20 bu. Dec. 8, the highest since Sept. 9. This new, higher level was about 10¢ bu. above the mark of only a little more than a week before.

The advance in soybean prices indicates farmers' reluctance to sell, anticipating a tight supply position later in the season. It also reflects large export sales and soybean crushings. Processor demand for soybeans to fill export orders for soybean oil was reported active.

The soybean price factor appears more important when consideration is given to the fact that active crushing of soybeans to obtain soybean oil for export has resulted in larger supplies of soybean meal.

USDA says soybeans inspected for export in the week ending Dec. 2 rose to 5,660,169 bu. from 5,040,191 bu. in the preceding week. This brought the total for the season, begun Oct. 1, to 39,566,828 bu., up from 35,777,074 bu. in the like period a year earlier.

Soybean meal's price position, now the highest since late October, has been firmed by a slowdown in the flow of competing corn, which has resulted in higher prices for the grain.

Millfeeds gained substantially this week. Some major markets added $2 ton. Although many flour milling centers reported heavier production, millfeed demand was greatly stimulated by colder weather—more than enough to offset the generally heavier supply.

Animal protein feeds were reported to be in excellent demand. Supplies of tankage were only fair and meat meal was said to be on the tight side. Hog slaughtering has calmed down. Tankage and meat and bone meal prices advanced up to $7 during the week.

Substantially lower prices for defluorinated and dicalcium phosphate were reported this week. The reduction was generally $5.

Markets for feeding cane molasses were steady during the week ended Dec. 6. Some molasses users were reported replacing part of their molasses requirements with corn and other competitive carbohydrate substitutes. Also, most users in the Midwest and South had previously contracted for their molasses needs at lower prices.

USDA says citrus molasses is in very limited supply. Processors of the new crop have used most production to date in a blend with citrus pulp. Old crop supplies are practically exhausted.

Prices quoted were unchanged to $2 ton higher.

Guadeloupe, in French West Indies, has sold about 3.5 million gallons of 1960 crop blackstrap molasses for shipment to the U.S. Prices reported paid were not confirmed immediately.

BRAIN

(Continued from page 1)

than a ration based on certain feeding standards and showed a 10% improvement in feed efficiency.

Dr. T. W. Perry of Purdue University, who summarizes Animal Production Society research reports in an article on page 10, observes (with tongue in cheek): "With this additional encroachment of mechanical brains upon jobs normally performed by men, an end of the college professor and of the commercial nutritionist may be imminent. Here is an example of a mechanical brain doing a better job of ration formulation than a team of highly trained scientists."

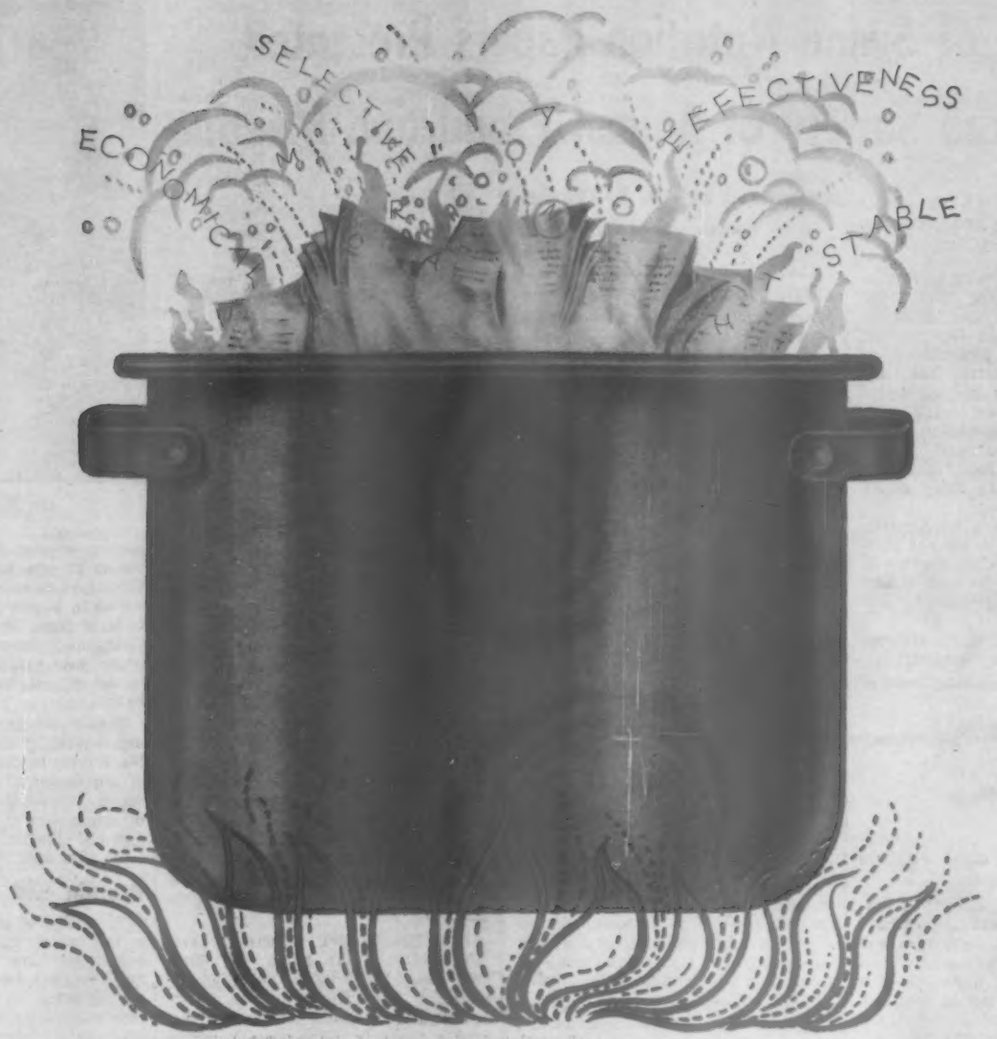
Here's what happened, according to the paper presented at the Chicago meeting:

When animal scientists Crampton, Lloyd and Mount, at McGill University, Canada, asked an electronic computer to tell them the least-cost ration when certain nutrients were specified, it gave them a ration costing $73 per ton. A nutritionally proven, early weaning ration originally developed in their department based on feeding standards (that is, tables of data assembled from independently conducted feeding tests) cost $99 per ton.

Their paper reported the comparative performance of 96 early weaned pigs (21 days) fed individually in a comparative feeding trial for six weeks. The two rations were offered to two equal lots of pigs as dry meal in self-feeders. Water was available at nearby fonts.

Pigs ate an average of 1.9 lb. of the electronically computed ration, which was 11% less than the amount eaten by the control pigs getting the ration calculated by feeding standards. Pigs in both groups average 0.9 lb. daily gain. Thus, the electronically calculated cheaper ration brought about a 10% improvement in feed efficiency.

The Canadian scientists said the improvement presumably is to be credited to the improved balance of nutrients in the computed formula and especially to a reduction of disregarded nutrient excesses in the control ration.



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Summary of Swine Nutrition Papers Presented At American Society of Animal Production Meeting

Summarized by Dr. T. W. Perry
Purdue University

A total of 312 abstracts were submitted for presentation at the 1960 meetings in Chicago. The limitation of time during the two day meeting did not permit the presentation of all the abstracts submitted. The largest number of abstracts submitted was in the field of beef cattle, with those concerned with sheep second and those concerned with swine, third. In addition, there were abstracts concerned with dairy calves and laboratory animals.

The papers presented were classified in accordance with subject matter contained in the classification of nutrition, physiology, genetics, meats, pastures and forages, teaching and extension.

Reviews of selected papers are presented on the following subjects:

- Feed additives, including several antibiotics.
- Protein and amino acids.
- Trace minerals.
- Energy.
- Calcium and phosphorus.

Feed Additives

Feed additives, as usual, came in for their share of discussion.

VIRGINIAMYCIN, A NEW ANTIBIOTIC FOR GROWING SWINE—C. E. Barnhart, J. C. Robertson and H. W. Miller, Kentucky: A new antibiotic, Virginiamycin, when fed at a level of 40 gm. per ton of complete mixed ration, resulted in consistent improvement in rate of gain and efficiency of feed utilization. This follows the trend that new unused antibiotics seem to be more effective initially with swine than those which have been used for a longer period of time.

Four feeding trials involving 195 weanling pigs were conducted to study the value of a new antibiotic called Virginiamycin. A corn-soybean meal basal ration was fed. The growth response and improvement in feed efficiency were used to evaluate the addition of from 20 to 80 gm. of Virginiamycin per ton of complete ration, when compared against the negative control fed none, or the positive control whose ration was fortified with 40 gm. Aureomycin per ton. In three of the four trials, a level of 40 gm. of Virginiamycin was consistent in improving rate of gain and efficiency of feed conversion. Higher or lower levels were not as effective as the 40 gm. per ton level. In the two trials in which it was compared with the 40 gm. level of Aureomycin, 40 gm. of Virginiamycin was more effective.

TENNECETIN, BACITRACIN AND AUREOMYCIN FOR GROWING-FINISHING SWINE — S. A. Griffin, Tennessee: Another new antibiotic, tennecetin, was without apparent effect on swine. There are many, many potential antibiotics which can be tested. Probably only a few of the many available antibiotics can be expected to be of value. However, the hidden potential of untested antibiotics makes it mandatory that new antibiotics be screened constantly.

The value of a new antibiotic, tennecetin, when fed alone or in combination with either Aureomycin or bacitracin was tested with weanling Duroc and Hampshire pigs. The feeding of a ration containing 200 "units" of tennecetin per pound of ration had no effect on growth rate and little effect on feed efficiency. The feeding of 0.10 mg. of either bacitracin or Aureomycin resulted in a 10% and 7% increase in gain, respectively. The addition of tennecetin to either bacitracin or Aureomycin was without any synergistic or additive effect.

EDITOR'S NOTE: The accompanying article contains summaries of selected swine nutrition papers presented at the annual meeting of the American Society of Animal Production Nov. 25-26 in Chicago. The reports were summarized by Dr. T. W. Perry, professor of animal science Purdue University, Lafayette, Ind. Summaries of beef cattle and sheep nutrition papers will appear in next week's Feedstuffs.

LEVELS OF SPIRAMYCIN AND TYLOSIN FOR GROWING-FINISHING SWINE—J. H. Conrad, D. M. Henricks and W. M. Beeson, Purdue: Two other new antibiotics exerted similar stimuli in gain. These two were spiramycin and tylosin. However, much of the early spurt in gain obtained between weaning and 100 lb. was lost when the pigs were gaining from 100 lb. to a market weight of 200 lb. This phenomenon of an early boost in gain—but none later on or perhaps even a depression later on—is one that is hard to explain in connection with antibiotic feeding.

Two experiments involving 160 weanling Duroc pigs were conducted on concrete to compare two new antibiotics, fed at different levels. Rations which contained 20 gm. Aureomycin per ton; 10 gm. spiramycin, 20 gm. tylosin; tylosin 15 gm. and penicillin 5 gm.; or streptomycin 15 gm. and penicillin 5 gm., resulted in highly significant increases in rate of gain over controls whose ration contained no antibiotics, up to the time the pigs weighed 100 lb. However, much of the advantage in favor of the antibiotics disappeared while the pigs were gaining from 100 lb. to 200 lb. In the second trial, spiramycin and tylosin again resulted in significant increases in gains for pigs from weaning to 100 lb. liveweight.

TYLOSIN—A NEW ANTIBIOTIC GROWTH STIMULANT FOR SWINE—C. E. Jordan, W. P. Waitt and T. M. Means, Eli Lilly & Co.: Another set of research data shows the stimulation of the new antibiotic tylosin. Once again, the big boost in gain was early in life, but diminished quite rapidly when the pigs were gaining in the 100-200 lb. bracket. However, the early boost was sufficient to give an over-all advantage by the time the hogs reached market weight.

Five experiments were conducted with weanling pigs to determine the effect of adding various levels of tylosin. Levels ranging from 10 to 100 gm. per ton of complete mixed ration were tested. Growth rate was stimulated as much as 44% in the very young and small pig (15 lb. at the start). The effect was greatest in the young pig, but tapered off as the pig became larger. The increase in gain was of the magnitude of 17% between 40 and 100 lb., and as much as 9% from 100 lb. to market weight. The optimum level of feeding tylosin appeared to be 40 gm. per ton for pigs up to 40 lb. liveweight; 20 gm. from 40-100 lb., and 10 gm. from 100 lb. to market weight. Feed efficiency was not greatly improved between 100 lb. and market weight.

VALUE OF AUREOMYCIN, TYLOSIN, ZINC BACITRACIN AND PENICILLIN AS RATION ADDITIVES FOR SWINE—D. M. Thrasher and Sam L. Hansard, Louisiana: Still another source reports the value of feeding the antibiotic tylosin to pigs. But the secret seems to be that the feeding must be started as early in the life of the pig as possible if maximum stimulation is started. It would appear that little if any advantage would be obtained by initiating the feeding of most antibiotics tested after the pigs weigh 75-100 lb.

Weanling pigs fed a corn-soy basal were used to determine the value of adding 40 gm. Aureomycin per ton; 40 gm. tylosin; 20 gm. tylosin; 20 gm. zinc bacitracin; or 15 gm. zinc bacitracin plus 5 gm. penicillin. When each lot averaged 100 lb., the level of antibiotic was reduced by one-half. After 42 days, all additives resulted in highly significant increases in rate of gain. By the end of the study, some of the advantage for the various additives had been lost. In the over-all results, rates of gain were increased 8.4% by Aureomycin, 15% by tylosin and 7.6% by zinc bacitracin plus penicillin.

INTERMITTENT FEEDING OF ANTIBIOTIC TO PIGS IN DRY LOT—H. S. Teague, Ohio: If you're going to feed antibiotics to swine, probably you should start early and feed constantly. However, the Ohio data indicated intermittent feeding of antibiotics was just about as good as constant feeding.

The effect on pig performance from feeding antibiotics intermittently as compared to continuous feeding was studied. In three dry lot trials, feed containing 20 gm. Aureomycin per ton of complete mixed rations was fed every other week, every other two weeks, or continuously. A control group received no antibiotics in their ration. A comparison of the weekly performance of pigs on all treatments showed that neither feed consumption nor rate of gain showed an immediate response to the periodic inclusion or exclusion of antibiotic. Combining the first eight week performance of pigs in all trials, the controls, those fed antibiotic every other week, every other two weeks or continuously made average daily gains of 1.25, 1.36, 1.39 and 1.41 lb. per day, respectively.

EFFECT OF CHEMOTHERAPEUTICS ON THE FECAL FLORA OF YOUNG PIGS—T. F. Kellogg, L. Y. Quinn, V. W. Hays, D. V. Catron and V. C. Speer, Iowa: Six different antibiotics, an arsenical and copper sulfate were compared for their effect on growth rate and fecal flora of two week old pigs. All of the additives affected fecal flora and several of them resulted in increased rates of gain. Based on four weeks gain data, the addition of Aureomycin, terramycin, penicillin, streptomycin or neomycin, at a level of 25 mg. per lb. of ration, resulted in most consistent gain increases: bacitracin exerted no effect or gain; an arsonic acid derivative had no effect, and 250 p.p.m. of copper exerted a positive effect on gain.

EFFECTS OF COPPER OXIDE, COPPER SULFATE AND CHLORTETRACYCLINE ON PERFORMANCE OF BABY PIGS—R. J. Bunch, V. C. Speer and V. W. Hays, Iowa: Another experiment from the Iowa station showed the benefit of supplemental copper for pigs from 2-8 weeks of age. Levels of 0, 125, 250, 375 p.p.m. of supplemental copper resulted in increased gains of a magnitude of from 10 to 12% in the very young pig. These increases in gain were quite similar to those obtained by 50 mg. of Aureomycin per lb. of ration.

Dr. T. W. Perry

The levels and sources of copper did not result in increased hemoglobin levels. In fact, the higher levels of supplemental copper appeared to depress the level of hemoglobin. Level of copper in the liver rose in a straight line relationship with the level of copper in the ration.

Protein and Amino Acids

A great deal of interest was shown a few years ago when several research workers showed that a fortified corn-soy diet was just as efficient for growing and finishing swine as one which contained a larger variety of protein sources. Also, the need for supplemental amino acids when the fortified soy-corn ration is modified has received consideration from several research workers.

EFFECT OF TANKAGE IN GROWING SWINE RATIONS ON GROWTH AND CERTAIN CARCASS CHARACTERISTICS — C. C. Brooks, H. R. Thomas and R. F. Kelly, Virginia: A corn-soy ration proved to be just as good as a ration in which a part of the protein supplement came from tankage and a part came from soybean oil meal. Both of the rations above were superior to a corn-tankage ration. A critical amino acid analysis will show that a corn-soy diet contains a better balance of essential amino acids than a corn-tankage ration. If it were feasible, the corn-tankage ration could be made nutritionally equal to a corn-soy diet by amino acid supplementation.

Two experiments were conducted to investigate the effect of tankage in the ration of growing swine. Each trial included three lots of seven pigs each which were fed as follows: Lot 1—corn-soy; Lot 2—corn-soy tankage (17% total protein from tankage); Lot 3—corn-tankage. The average daily gains for the three treatments were 1.58 lb.; 1.61 lb., and 1.29 lb. Loin eye areas were significantly larger in pigs from lot fed the tankage.

LYSINE SUPPLEMENTATION OF SORGHUM GRAIN-COTTONSEED MEAL RATION FOR GROWING-FATTENING PIGS—Fred Hale and Carl M. Lyman, Texas: Lysine appears to be the key amino acid missing when a cottonseed meal-grain sorghum ration is fed to growing-finishing swine. Two cottonseed meals, one of low protein quality and another with relatively high protein quality (both low in gossypol) were used. In the case of the low protein quality of cottonseed meal, the addition of 0.6% lysine increased growth

rate by 500%; in the case of the high quality cottonseed meal, the increase in growth rate was 68%. The results indicate that cottonseed meals of average protein quality can be effectively used as the sole protein concentrate when supplemented with lysine.

EFFECTS OF LYSINE ADDITIONS AND PELLETING UPON NUTRITIVE VALUE OF MILO FOR FINISHING SWINE—A. H. Jensen, D. E. Becker and S. W. Terrill, Illinois: Milo is a grain which contains more crude protein than corn. Amino acid supplementation of milo made it almost as good a complete ration for swine as one containing corn and soybean oil meal. This gives a hint of the potential of amino acid supplementation for swine rations.

In rations containing milo fortified with vitamins, minerals and antibiotics, 0.25% of supplemental lysine was superior to 1.0% of either condensed fish solubles or soybean oil meal. Neither 0.1% methionine nor 0.1% methionine plus 0.02% threonine showed a significant synergistic effect in the first trial. In a second experiment, the pelleting of the milo rations greatly improved their nutritive value so that the boost from supplemental lysine was not as great with pelleted rations as with rations in the meal form. In a study designed to identify the optimum level of supplemental lysine, maximum increase in gain was obtained when a level of 0.16% supplemental lysine was added.

UTILIZATION OF PREDIGESTED SOYA PROTEIN BY BABY PIGS—A. J. Clark, L. H. Neagle, V. W. Hays, D. V. Catron and V. C. Speer, Iowa: A new angle in helping pigs utilize soybean products is to predigest the soybean products with enzyme preparation before they are fed to pigs. Three experiments were conducted to study the influence of predigested soybean oil meal and raw soya flour with a bacteria protease. The length of the predigestion period ranged from 1-16 hours. Predigestion of the soybean oil meal resulted in increased gain and feed utilization as compared with the untreated soybean oil meal. Predigestion of the raw soya flour for nine hours resulted in improved digestibility and feed efficiency. However, performance for the soybean oil meal basal was still better than for the predigested raw soya flour.

This is an interesting approach to better utilization of soybean products. Someday, someone is going to learn how to feed unheated ground soybeans to swine.

VALUE OF UNEXTRACTED SOYBEAN MEAL FOR GROWING-FINISHING SWINE—W. F. Nickelson, D. E. Becker, A. H. Jensen and S. W. Terrill, Illinois: Unextracted soybean meal was compared with regular soybean oil meal. When the two were compared as the sole source of protein, the extracted soybean oil meal was superior. When the two were compared as supplemental to the protein of corn, the unextracted soybean meal was superior. However, this effect in favor of the unextracted soybean meal may have been due to the extra energy contained in the soybean oil because when corn was supplemented with extracted meal, but on the same caloric basis, the extracted meal was superior to the unextracted meal.

Trace Minerals

Very recently animal nutritionists have come to realize that too little is known concerning the role of trace minerals in balancing the formulation equation. An example of this is the role of zinc in preventing parakeratosis in swine.

SOME EFFECTS OF PHYTIC ACID ON ZINC AVAILABILITY AND PHYSIOLOGY IN SWINE—D. Oberleas, M. E. Muhrer and B. L. O'Dell, Missouri: The identification of certain of the chelating agents and their interrelationship with zinc has solved at least a part of the mystery of why it is less difficult to produce parakeratosis on a soybean protein diet than it is on a skimmilk protein diet.

Weanling pigs were fed basal diets based on casein and soybean oil meal. Visual and histological analyses indicated that pigs receiving the soybean meal basal (25 p.p.m. Zn) developed parakeratosis but those fed the casein basal (14 p.p.m. Zn) did not. However, the addition of phytic acid to the casein basal resulted in the parakeratotic condition. Zinc supplementation at 100 p.p.m. prevented the effects of the added phytic acid. These data showed that parakeratosis can be produced on a diet composed of animal protein if phytic acid is added at either low or high levels of dietary calcium.

PHYTIC ACID AND UNIDENTIFIED GROWTH FACTOR RESPONSE IN SWINE—M. P. Plumlee, D. R. Whitaker, W. H. Smith, J. H. Conrad, H. E. Parker and W. M. Beeson, Purdue: Several additives were studied to learn whether the effect of the phytic acid contained in soybean products could be counteracted. Pigs that were three weeks of age at the start grew better on a casein semi-purified diet than pigs on the soy semi-purified diet. An isopropanol-insoluble residue of distillers dried solubles did not apparently neutralize the soy effect whereas 5% of DDS exerted some beneficial effect. The addition of phytic acid (0.61%) to the casein basal caused a depression in growth rate which was not aided by the addition of DDS. However, the addition of 100 p.p.m. of zinc tended to neutralize the effect of phytic acid added or of the phytic acid naturally contained in soybean products.

FACTORS AFFECTING SOYA-PROTEIN UTILIZATION BY YOUNG PIGS AND RATS—J. H. Maner, W. G. Pond and J. K. Loosli, Cornell: Three-day-old pigs were used to study the effects of methionine supplementation to a soya-protein simulated milk diet and to compare casein and soya-protein as the protein sources. The addition of 0.6% or 1.2% of methionine resulted in approximately a 15% increase in gain, with both levels giving approximately the same response. However, pigs fed the casein basal gained over 50% more rapidly than the soya-protein controls.

It was interesting to learn that soya-protein diets passed through the digestive tract in 14-24 hours whereas the casein diet was retained from 36 to 48 hours.

ORAL IRON REQUIREMENTS OF THE EARLY-WEANED PIG—R. A. Pickett, M. P. Plumlee, W. H. Smith and W. M. Beeson, Purdue: An optimal supplemental iron level for young pigs appears to be between 60 and 80 p.p.m. Duroc pigs weaned at 10-14 days of age were fed a dried skimmilk basal to which levels of from 15 to 120 p.p.m. of iron were added. Levels of 15, 30, 40 or 50 p.p.m. iron resulted in reduced growth rate while levels of 60 or more produced normal growth. Erythrocyte concentration was lower at levels up to 60 p.p.m. while hemoglobin and hematoerit were reduced significantly at iron levels up to 80 p.p.m.

PLACENTAL AND MAMMARY TRANSFER OF IRON-DEXTRAN GIVEN INTRAMUSCULARLY DURING GESTATION OR LACTATION—W. G. Pond, R. S. Lowrey, J. H.

(Turn to MEETING, page 94)

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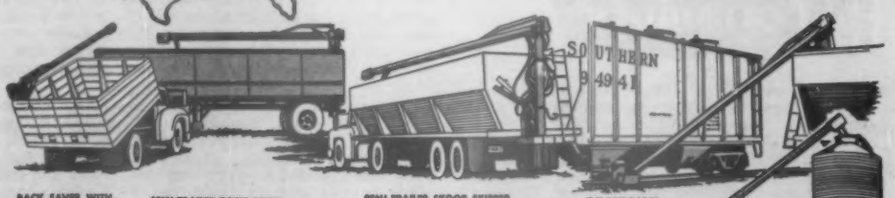

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West Virginia Pulp Consolidates Sales

NEW YORK—West Virginia Pulp and Paper Co. has consolidated its multiwall bag division sales organization on a divisional basis and launched a market development program, it was announced by Victor S. Luke, division manager.

Jason M. Elsas and Sheldon Y. Carnes, presently managers of the division's southern and northern regions respectively, have been given new responsibilities on a divisional basis.

Mr. Elsas has been appointed to the new position of sales manager for the entire division. Presently located in New Orleans, he will move to division headquarters in New York to direct West Virginia's sales in the multiwall field.

Mr. Carnes has been named market development manager for the division. In his new assignment, Mr. Carnes will develop new markets for multiwall products and explore the market potential of new products in this field.

Both men joined West Virginia in 1958 when the company entered the multiwall field. Mr. Elsas has been vice president of Fulton Bag and Cotton Mills in New Orleans and Mr. Carnes was vice president and general sales manager with Arkell and Smiths, Canajoharie, N.Y.

Two shifts in district sales territories were also announced by Mr. Luke. The sales office headquartered at Charlottesville, Va., has been made part of the sales district centered in Atlanta, Ga., and the Kansas City district has been combined with the Chicago district. Henry M. Howe will direct sales for the consolidated district at Atlanta and H. Lockwood Frizzell, formerly district manager in Charlottesville, will manage the expanded Chicago district.

PLANS NEW ELEVATOR

PETALUMA, CAL. — Barlas Feed Co. plans to build a 60 ft. elevator and eight new feed bins at its plant at the east end of Petaluma. The new installation will handle feed concentrates. The county board of zoning adjustment has granted a use permit for the project. The eight bins will be 35 to 40 ft. in height and 8 to 12 ft. in width. The elevator and conveyor system will elevate and transport feed concentrates to the various bins.

Experts to Discuss Thyroactive Compounds For Swine Dec. 14

KANSAS CITY — An invitational seminar on all phases of feeding thyroactive compounds to swine will take place in Kansas City, Dec. 14. The meeting is being sponsored by Agri-Tech, Inc., Kansas City, and about 25 of the leading scientists interested in this subject will attend, according to Bruce Varney, president of the sponsoring organization.

The session will be held at the Continental Hotel beginning at 8 a.m. The meeting will conclude with a luncheon at 1 p.m.

Mr. Varney said that the purpose of the meeting is to explore thoroughly the work that has been done in this field and the progress that has been made, and to discuss the possible direction of future research in this area of feeding. Speakers at the seminar, and their general topics, include the following:

Dr. E. Paul Reineke, department of veterinary medicine, Michigan State University, reviewing the history of thyroactive compounds with particular emphasis on the growing and finishing of swine; Dr. Vaughn Speer, department of animal husbandry, Iowa State University, the influence of thyroactive compounds on lactation.

Dr. Sumner Griffin, department of animal husbandry, University of Tennessee, the influences of thyroactive compounds on gestation; Dr. C. W. Turner, department of dairy husbandry, University of Missouri, the endocrine interrelations of all hormones.

Dr. E. R. Peo and Dr. Don Hudman, department of animal husbandry, University of Nebraska, baby pig starters; Dr. Damon Catron, Walnut Grove Products Co., Atlantic, Iowa, a summarization of thyroactive compound progress and possible future direction of research in swine feeding.

Also, Dr. Harvey Helms, veterinarian of Trimble Manor, Missouri swine farm, will discuss practical problems in swine feeding at the farm level.

Canada's Medicated Feed Registration Told

OTTAWA—Officials of the plant products division, Canada Department of Agriculture, reported that 1,706 medicated feeds were registered with the division in Ottawa during the 1959-60 feed year.

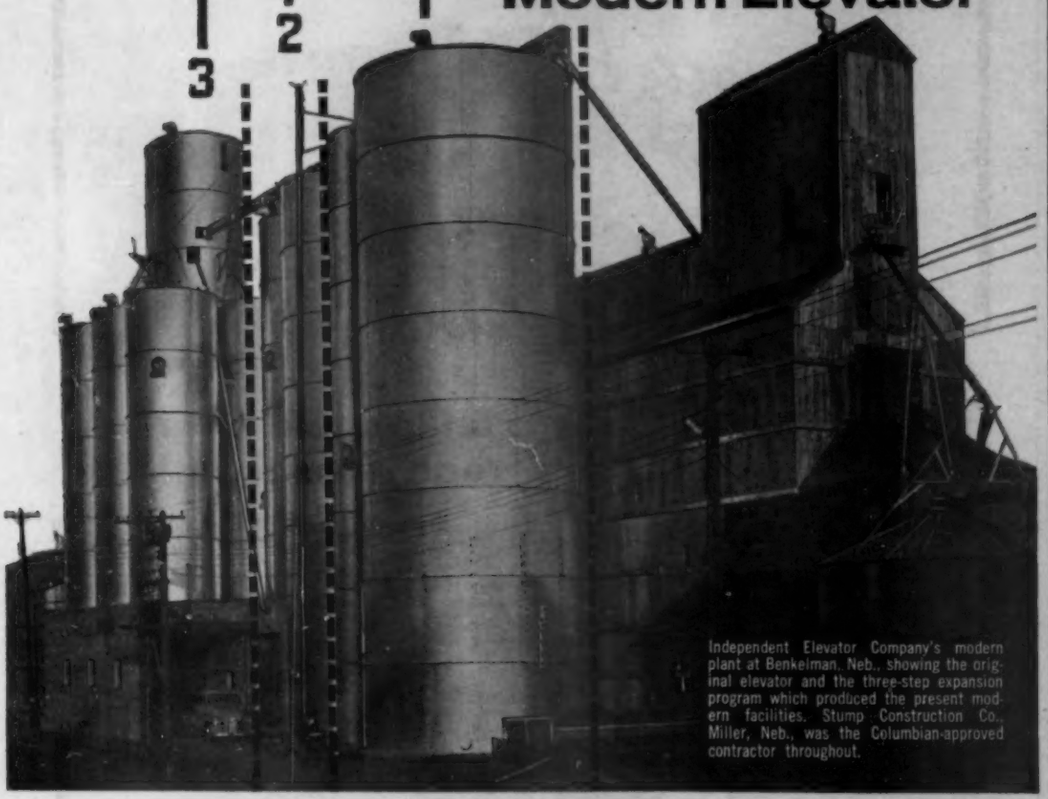
Medicated feeds now represent 16% of all feeds registered—the same percentage as in the previous year. The total of all feeds was 10,322, which was an advance of 11% in the year. In 1955, there were only about 250 medicated feeds registered.

The number of medicated feeds breaks down into 35 for cattle, 347 for hogs, 331 for turkeys, 900 for chickens and the remainder for other livestock.

The number of companies registering feeds increased from 910 to 947 during the past year, according to the report.

Few applications for the registration of feeds are rejected because the submissions in support of the claims which the company wishes to make on the feed label are thoroughly investigated in advance. At the close of the feed registration year, 1959-60, a total of 10,322 products were registered by 947 firms.

3-Step MATCHED EXPANSION Built this Profitable, Modern Elevator



Independent Elevator Company's modern plant at Benkelman, Neb., showing the original elevator and the three-step expansion program which produced the present modern facilities. Stump Construction Co., Miller, Neb., was the Columbian-approved contractor throughout.

with BOLTED STEEL TANKS

MASTER-CRAFTED BY COLUMBIAN SINCE 1895

Independent Elevator Co. of Benkelman, Neb., believes in keeping pace with growing business and growing demand for modern elevator service. Columbian Bolted Steel Tanks and Columbian grain handling equipment—plus Columbian "Look Ahead" engineering—were the easy, practical, economical answer to Independent's expansion and modernization needs. The result—a completely profitable and modern elevator, equipped to serve an ever-growing customer list speedily and efficiently.

Starting with an old country elevator, still in use, Independent added (1) two modern Columbian 15' x 48' tanks. Two more (2) matching units were added later and, in 1959, the profitable operation of this expanded plant called for additional storage (3), a new headhouse and modern blending and classifying tanks over an enclosed driveway. This modernization, by meeting present day demands, protects the company's storage investment.

It pays to plan ahead—and to choose Columbian bolted steel tanks, Big Bins or Tall Tanks for any expansion, because their economy, speed of erection and versatility make future expansion more practical and profitable. Columbian-approved contractors and distributors will be glad to assist you with your expansion and modernization plans.

Write today for FREE Columbian Bolted Steel Tank, Big Bin and Tall Tank Folders and Columbian-approved contractors in your area.

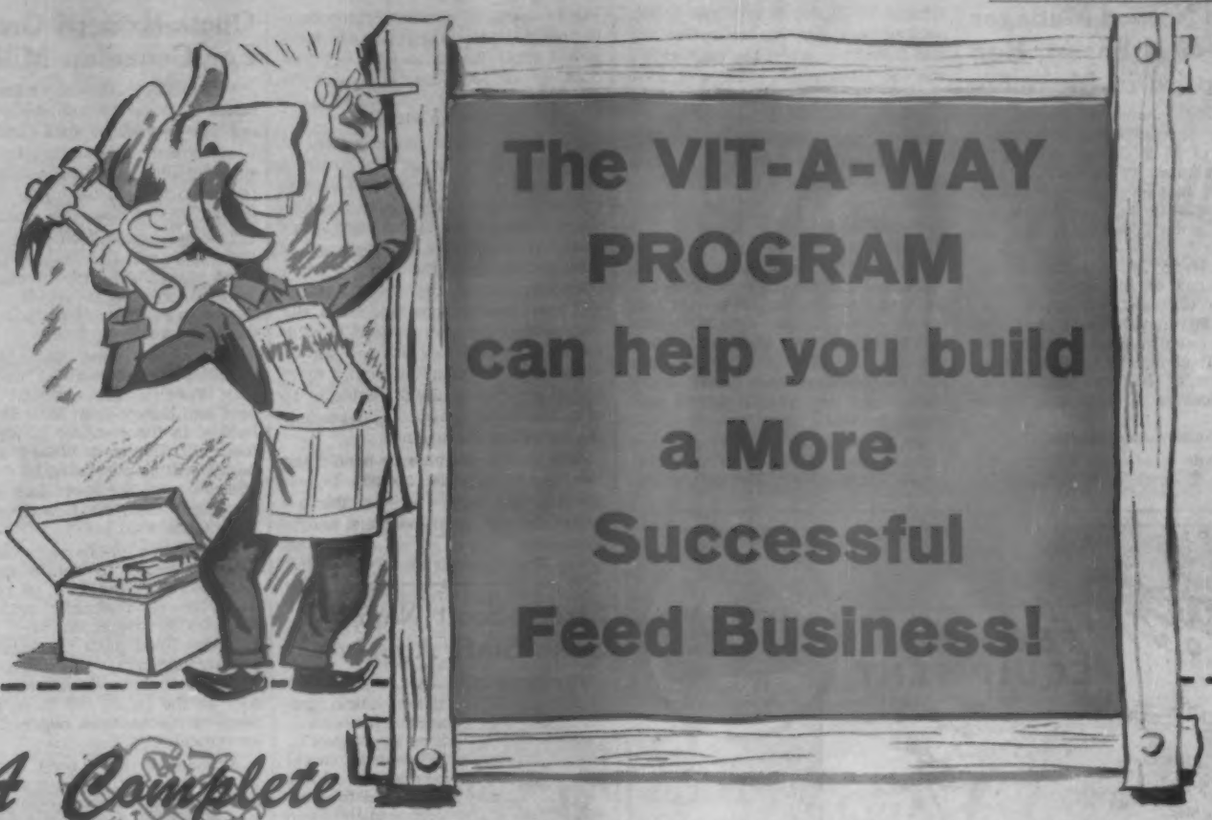
COLUMBIAN STEEL TANK CO. P.O. Box 4848-R Kansas City, Mo.

Member, American Dehydrators Association; Associate member, Grain and Feed Dealers National Association

STEEL, Master-Crafted by Columbian . . . First for Lasting Strength

We do contract steel fabrication

Fleischmann's F-I-D-Y IRRADIATED DRY YEAST RICH IN VITAMIN D FOR FOUR FOOTED ANIMALS



A Complete Program to BUILD Better FEEDS... AND BIGGER SALES VOLUME!

FIRST

We'll lay the foundation with VIT-A-WAY Mineral-Vitamin FORTIFIER as the base fortification for your feeds. This is a solid foundation upon which a steady growing—successful feed sales program can be built.

SECOND

We'll hammer out feed formulas for you that are confidential. Your formulas will be made using locally and easily available ingredients . . . and, they will be uniform and result-producing at the lowest possible cost to manufacture. Your formulas will be prepared by some of the nations best nutritionists, who are on the VIT-A-WAY Staff.

THIRD

We'll saw off many problems, through Nutrition Counsel—Our Department of Research and Control is always ready to answer questions and furnish data on "tomorrow's problems today" . . . to help you meet and solve feed problems in your trade area. This puts you in a better position to serve your customers with new developments in scientific and efficient feeding practices.

FOURTH

We'll help you drill a hole through competition by assisting you in advertising and promoting your own brand feeds. Our Advertising Department will help you "create" new business with sales literature, feeding direction folders, ad mats, point-of-sale pieces, direct mail and other selling tools.

FIFTH

We'll help smooth off customer objections by sending free mailings to them . . . for you. These mailings will go right into the home of the customer and prospect . . . with YOUR NAME imprinted on them. This invites them to visit and trade with you . . . and further explain the value of VIT-A-WAY in your feeds.

SIXTH

The VIT-A-WAY Program will paint a prettier profit-picture for your sales effort. We will assist you in holding feeder meetings and help train your salesmen so they will all know the value of selling and using your VIT-A-WAY Fortified feeds. It all adds up to a service that will help you have more successful feed business.

VIT-A-WAY, INC.
P. O. BOX 4311
FORT WORTH 6, TEXAS

WE'RE INTERESTED in the VIT-A-WAY Program

☐ Please send me more information
☐ Have your Representative call

My Name.....

Company.....

Address.....

Get the Facts Now!

VIT-A-WAY Products and Services have a place in YOUR business

VIT-A-WAY MINERAL-VITAMIN FORTIFIER IS MANUFACTURED BY AN EXCLUSIVE PROCESS. U. S. PATENT NO. 2,611,702

Texan Named Manager Of M & H Farms, Egg Enterprise in Memphis

MEMPHIS—James P. Bryan, egg production specialist, has been named manager of M & H Farms, Inc., recently organized to produce or purchase and market up to 70 million premium quality eggs weekly in the Memphis area (Feedstuffs, Oct. 15, page 1).

Joseph Hyde, Jr., president of the company and of the wholesale grocery firm of Malone & Hyde, Inc., said Mr. Bryan will be in charge of production and processing facilities—being built at nearby Oakland under supervision of Nutrena Mills, Inc., which operates a plant and offices here.

Construction Started

Mr. Hyde said construction has been started on three "controlled environment" laying houses and a connecting unit for egg collection. By mid-December, when the first houses will be completed, work will have started on two identical three-house groupings. The total complex, plus a plant for immediate cooling, processing, packaging and loading of eggs, and three houses for raising replacement chicks, is planned for completion July 1.

"Full operation of the farm, to house 90,000 laying hens and 30,000 replacement birds and to produce 34,000 doz. eggs weekly, will yield only a core of production, with far greater quantities being supplied by area growers," Mr. Hyde said. All eggs will be "certified fancy fresh" under Tennessee's new quality control program, he said.

Mr. Bryan, the newly appointed manager, is a native of Chicota, Texas. Before joining M & H Farms he was in charge of a major egg processing plant at Ft. Worth and previously had supervised large-scale egg production at locations elsewhere in Texas.

Ownership Shared

Mr. Hyde, whose grocery firm is associated with some 600 Memphis and outlying food stores, said ownership of the new company is shared by some 40 associated stores, with other stores to participate as egg supplies increase. He said the facility, when operating at capacity, "will produce and market less than one third the volume that we plan to need. It will, however, provide an assured supply with which to launch a quality marketing program and will enable us to contract with qualified independent producers for the balance.

"Eventually we plan to handle the total production of 300,000 layers, moving the eggs by refrigerated truck, through retail markets, and to customers' tables in as few as 48 hours after laying," Mr. Hyde said.

Jacobson
QUALITY
FEED MILL EQUIPMENT
Recirculating Collectors
Heavy Duty Inclined Drag Feeders
Heavy Duty Truck Hoists
Ear Corn Crusher Feeders
ECONOMY Alnico Permanent Magnetic Separators
Vertical Mixers
JACOBSON HAMMERMILLS
AJACS Quick Screen Change
UNIVERSAL Quick Screen Change
AJACS-O-MATIC Remote Screen Change
JACOBSON MACHINE WORKS, INC.
Nearly a Half Century of Service to the Feed Industry
1090 Tenth Avenue S. E. Dept. M Minneapolis 14, Minn.

Strong-Scott Names Sales Staff Appointee

MINNEAPOLIS—A. J. Bury, assistant sales manager of the Strong-Scott Mfg. Co., Minneapolis, will handle the firm's grain and feed accounts in the Twin Cities area starting Jan. 1.

A. J. Bury

Mr. Bury has been associated with Strong-Scott for 25 years and has served as assistant sales manager of the grain and feed processing division for the past year.

Quota-Exempt Grain For Canadian Mills

WINNIPEG—Provisions have been made whereby 1960-61 delivery permit holders will be authorized to deliver, outside delivery quota regulations, supplies of wheat, oats and barley to designated feed mills, the Canadian Wheat Board announced.

The designated feed mills will be those mills which complete an agreement with the board, effective until July 31, 1961, and which will be named in an order of the board to be issued at an early date.

In general terms, the agreement provides that designated feed mills may receive quota-exempt wheat, oats and barley from 1960-61 permit holders in the province in which the feed mill is located. Wheat, oats and barley will be purchased by designated feed mills for their own account at prices negotiated with delivery permit holders.

Wheat, oats and barley so acquired must be resold by contracting feed mills solely in the form of prepared or processed feedstuffs within the province in which the feed mill is situated. Feed mills participating in the arrangement will be required to maintain records which are satisfactory to the board and to submit reports of purchases as required by the agreement.

Agreements have been forwarded to all feed mills in the prairie provinces. When the agreements are signed and returned to the board, an order of the board will be issued designating signatory feed mills as "non-quota feed mills." On designation, such feed mills may receive from 1960-61 delivery permit holders, and 1960-61 delivery permit holders may deliver to such feed mills, wheat, oats and barley, and any such receipts and deliveries will be exempt from delivery quota regulations.

Here's the one enzyme product that's activated for consistent results

When enzymes were first introduced into animal feeds, they were hailed as the latest development in faster animal gains. But their performance proved so inconsistent that their popularity waned.

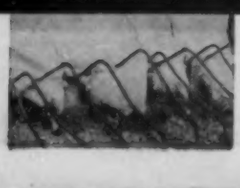
But now, ACTAFERM supplies a complete enzymatic system plus an activating substance that acts as a sparkplug to release the most efficient work of the enzymes in the feed and already in the animal body.

No other enzyme product has this activator and Northern Biochemical has a patent pending on it. During the past five years we have run hundreds of field and college tests on the ACTAFERM activated enzyme system.

ACTAFERM consistently releases more of the nutrients found in feed-stuffs. The result is top feeding efficiency and top quality meat, milk and eggs — results farmers can see for themselves.

Try ACTAFERM for yourself. Try it in your present formulation or compare it against any other enzyme preparation. We don't ask that you experiment with levels — we'll tell you exactly what levels work with poultry, hog, sheep and cattle feeds and dog food.

When you see the competitive edge ACTAFERM will give your feeds, you'll want it for your whole line.



ACTAFERM

the Field-Proved and College-Tested ACTIVATED Enzyme System (Formerly called ACTAZYME)

WRITE TODAY for 40-page manual showing results of tests feeding ACTAFERM.

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Franklin Lewis Co. Mesa, Arizona

3 Sales Appointments Announced by Bemis

ST. LOUIS—Three appointments within the sales operation of the Bemis Bro. Bag Co. have been announced by C. W. Akin, executive vice president.

D. Woodmansee, Jr.

George W. Finlay has been named manager of the Wichita bag plant and sales division and will be succeeded as supervisor for multiwall bag sales in the company's general sales department in St. Louis by U. A. Tull. The latter's post as sales manager of the Memphis sales division will be filled by Donald H. Woodmansee, Jr.

Mr. Finlay will assume his new position Feb. 28 upon the retirement of the present plant manager, M. E. Ocker. Mr. Tull's and Mr. Woodmansee's appointments were effective Dec. 1.

Mr. Finlay, who joined Bemis in 1946, two years later became office manager at the company's plant in Mobile, Ala. He served there in office production and sales positions before becoming supervisor for multi-

George W. Finlay U. A. Tull

wall bag sales in St. Louis in 1957. Mr. Finlay was graduated from St. Louis University in 1941.

Mr. Tull has been with the Memphis sales division since 1947 and was appointed sales manager there in 1952. He attended Union University in Jackson, Tenn.

Mr. Woodmansee joined Bemis as a sales representative in its Memphis sales division in 1951. He was graduated from the University of Tennessee, Knoxville.

USDA Tells Rates of Poultry Condemnation

WASHINGTON—The post-mortem condemnation rate for broiler or young chickens during the month of October was 2.15%, according to announcement by the U.S. Department of Agriculture.

Percentages of post-mortem condemnations of other poultry were: mature chickens, 2.87%; young turkeys, 1.41%; old turkeys, 1.27%; fryer-roaster turkeys, 2.69%, and ducks, 2.07%. Total weight of the post-mortem condemnations was 13,941,000 lb. (NYD weight).

Ante-mortem condemnations totaled 1,312,000 lb. (live weight) in all classes. Condemnation rates were: young chickens, 0.16%; mature chickens, 0.32%; young turkeys, 0.14%; old turkeys, 0.26%; fryer-roaster turkeys, 0.18%, and ducks, 0.03%.

Inspections under the Poultry Products Inspection Act during October totaled 159,661,000 head compared with 155,600,000 a year earlier, USDA said.

The numbers and live weight pounds of poultry inspected by classes during the month are: young chickens, 130,194,000 head, 450,108,000 lb.; mature chickens, 15,735,000 head, 74,791,000 lb.; young turkeys, 11,143,000 head, 225,543,000 lb.; old turkeys, 78,000 head, 1,400,000 lb.; fryer-roaster turkeys, 1,643,000 head, 14,676,000 lb., and ducks, 868,000 head, 5,424,000 lb.

G.L.F. Exchange Officers Reelected

ITHACA, N.Y. — J. C. Corwith, Water Mill and Clifford E. Snyder, Pittstown, N.J., were reelected president and vice president respectively of Cooperative G.L.F. Exchange.

The two men, each serving his ninth term of office, were renamed by the G.L.F. board of directors.

Other G.L.F. executive officers, renamed by the board for one year terms, are: E. H. Fallon, general manager; R. Bruce Gervan, secretary; William J. Fields, treasurer; Phil D. Stump, controller, and George R. Pfann, general counsel.

Grain Storage Added

HILLIARD, OHIO — Russells Co., Fletcher, Ohio, announced recently the start of construction on a new grain storage tank. When completed about Jan. 1, it will double the firm's capacity for grain storage. Kansas City Millwright Co., Kansas City, Mo., is erecting the 101 ft. high by 62 ft. in diameter tank west of the present elevator. It will be equipped with aeration and Hot Spot Detector cables, and will hold 250,000 bu., making a total of over 510,000 bu. capacity erected in Fletcher since 1957. The main office for Russells Co. is in Hilliard.

ADVERTISEMENT

AERATION PAYS OFF BIG IN '60

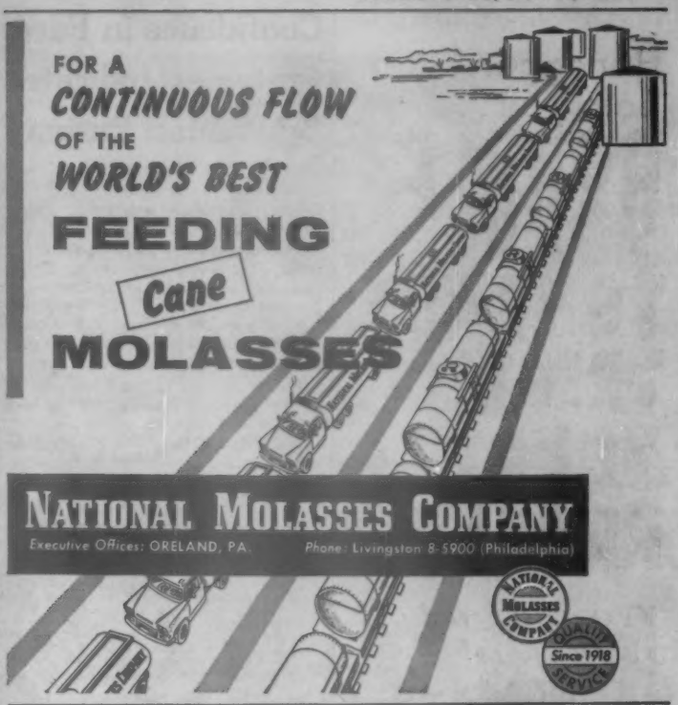
Insect Infestation Held To Minimum

Wondering if aeration is worth the cost? Then read this. Aerated elevators all over the country are reporting grain temperatures as low as 40° at the end of summer and, as a result, stored grain insects have been less of a problem this year than ever before.

The long cold winter plus the cool spring and moderate summer have helped. But it's aeration that has really made these record low grain temperatures possible. Good aeration means low grain temperatures and minimum insect infestation, uniform moisture content and elimination of hot spots and crusting.

How can you be sure aeration will do this for your grain? Just depend on Douglas. Douglas has been in the grain sanitation business for 44 years. Its aeration system is based on the engineering knowledge of air movement in grain and Douglas' specialized knowledge of the effect of storage conditions on grain.

Why not get the facts? See why Douglas gives you the most economical, most efficient grain aeration possible. Write for full details—no obligation. Grain Aeration Division, Douglas Chemical Company, 620 East 16th Avenue, North Kansas City, Mo.



EGGSHELL BRAND OYSTER SHELL
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OYSTER SHELL CORPORATION
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Pit Augers • Elevator Legs • Mixers • Scalpers •
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CUSTOM MILLERS SUPPLY CO.
BOX 537 MONMOUTH, ILLINOIS
MANUFACTURERS OF QUALITY MILLING EQUIPMENT SINCE 1930.

Honeggers' can help you...

DOUBLE YOUR TONNAGE TRIPLE YOUR PROFITS

What others have done, you can also do!

For the benefit of dealers in other areas, we would like to relate a few facts. Our company took on the complete Honegger franchise the last of April, 1959. Since that time, we have seen our sales more than double. We heartily recommend the Honegger franchise on the basis of our own company sales records.

W. B. (Bill) Robinson
Robinson Grain Company
Union City, Tennessee

with HONEGGERS' BIG FRANCHISE

Write or call today
HONEGGERS'
FAIRBURY, ILLINOIS

Confidence in Farm Customers Indicated By Ralston Purina

ST. LOUIS—"The farmer is now America's No. 1 customer and becoming a bigger one every year," says the 1960 annual report of Ralston Purina Co. "His spending for feeds, fertilizer, pesticides, drugs, gasoline, oil, tires and other production costs is up 20% in just the past five years. Selling and serving this kind of farmer offers a tremendous opportunity to Purina."

Purina, which last week reported a new all-time high in earnings, despite a slight reduction in sales (Feedstuffs, Dec. 3, page 1), indicated further confidence in the farm market of the 1960's with these words:

"Brainpower and business management have replaced horsepower on our farms. Total agricultural output has increased two thirds in the past two decades, while farm workers have declined some three million. Today the investment per farm worker exceeds the investment per worker in manufacturing. Many farmers have an investment that runs into hundreds of thousands of dollars.

"In spite of fewer farmers, fewer hens and fewer milking cows, farm production in America has reached an all-time high.

"Because he (today's farmer) is a more intelligent farmer who appreciates quality and service, he is a much better prospect than the farmer of a decade ago. The gross income of all farm families in 1959 was more than $44 billion, an amount almost equal to the total U.S. government spending for defense that year."

Feed Sales

Purina's annual report for the fiscal year ended Sept. 30 notes that feed sales "held up well in spite of generally unfavorable economic conditions in the poultry and livestock industries during much of the year. Our company record was far more favorable than that of the feed industry as a whole.

"Agriculture has been going through a period of great change in the past 10 years. During the decade ahead, many more changes will take place . . ."

Although Purina's net sales of $510,268,700 in 1960 were down some from the 1959 figure of $530,571,672, the company reported an increase in net earnings from $17,784,368 to $18,000,234.

"The results of the year prove the wisdom of our program of greater diversification," Donald Danforth, chairman of the board, said. "It is a justification of the courage your management has shown in making heavy expenditures in new plant facilities and in launching new products.

"Our Chow division continues to be the largest and most important division of the company. Some 120 basic formula feeds for livestock, poultry and other animals are manufactured in 58 Chow plants. But other divisions of our company are now showing equal or greater growth, and are contributing very substantially to total profits. This broadening of our base through diversification has added both strength and stability to our business."

Dog Food and Cereals

The annual report says, "Dog Chow continues to be the world's largest selling brand of dog food. During the past year we attained our objective of selling 30% of the dog food sold through grocery outlets. To meet this growing demand, we are constructing a new manufacturing unit at Battle Creek, Mich. This

(Turn to CONFIDENCE, page 99)

Balance Sheet

Ralston Purina Co. and Domestic and Canadian Subsidiaries Consolidated

ASSETS

	Sept. 30 1960	Sept. 30 1959
CURRENT ASSETS:		
Cash	$ 8,049,109	$ 6,471,495
Marketable securities, at cost which approximates market	6,615,166	2,262,460
Accounts receivable, less allowance for doubtful accounts	53,638,916	53,108,091
Advances on purchases of materials	2,156,448	1,982,126
Inventories (at approximate cost not in excess of market):		
Raw materials and packing supplies	25,986,104	31,833,706
Finished products	9,843,071	9,429,903
Prepaid expenses	1,868,896	1,424,860
Total current assets	$108,177,710	$106,512,641
Investments in and advances to unconsolidated foreign subsidiaries (at cost)	6,600,179	5,311,083
Plant and equipment (at cost):		
Land	2,175,828	2,131,565
Buildings and equipment, less accumulated depreciation $48,867,877, 1960; $44,052,042, 1959	93,809,006	84,942,346
Other assets and deferred charges	2,778,322	2,973,511
Trademarks, patents and goodwill	1	1
Total	$213,541,046	$201,871,147

LIABILITIES

	Sept. 30 1960	Sept. 30 1959
CURRENT LIABILITIES:		
Accounts payable	$ 11,649,789	$ 12,414,168
Dividends payable	1,953,672	1,946,552
Accrued expenses	5,614,495	5,017,814
Taxes on income	11,685,830	11,399,939
Total current liabilities	$ 30,903,786	$ 30,778,473
LONG-TERM DEBT:		
3¼% sinking fund debentures due 1971 (exclusive of $1,300,000 in treasury in 1960 and $1,800,000 in 1959)	12,200,000	12,200,000
3⅛% sinking fund debentures due 1977 (exclusive of $892,000 in treasury in 1960 and $1,103,000 in 1959)	12,908,000	13,097,000
	25,108,000	25,297,000
RESERVES:		
For self-insurance	542,518	706,293
For deferred federal income taxes	3,335,000	2,150,000
	3,877,518	2,856,293
SHAREHOLDERS' EQUITY:		
Cumulative preferred stock of $100 par value per share. Authorized 250,000 shares, none issued.		
Common stock of $5 par value per share, Authorized 8,000,000 shares (160,326 shares reserved under option agreements at Sept. 30, 1960). Issued and outstanding, 1960—6,512,239 shares; 1959—6,488,506 shares)	32,561,195	32,442,530
Premium received on capital stock in excess of par value (including $407,162 during year ended Sept. 30, 1960)	4,798,408	4,391,246
	37,359,603	36,833,776
Earnings invested in the business (at Sept. 30, 1960, $34,813,427 was restricted as to the payment of cash dividends under indentures relating to long-term debt)	116,292,139	106,105,605
Total shareholders' equity	153,651,742	142,939,381
Total	$213,541,046	$201,871,147

Earnings Statement

Ralston Purina Co. and Domestic and Canadian Subsidiaries Consolidated

	Year ended Sept. 30 1960	Year ended Sept. 30 1959
SALES OF PRODUCTS AND OTHER INCOME:		
Net sales	$510,268,700	$530,571,672
Other income, net	3,056,507	3,582,571
	513,325,207	534,154,243
COSTS, EXPENSES AND OTHER CHARGES:		
Materials and operating expenses	400,725,466	425,287,420
Administrative, research, distribution, and general expenses	63,832,958	62,006,288
Depreciation	6,487,137	5,475,651
Retirement plan expenses	2,519,469	2,424,701
Interest	1,301,943	1,211,815
Taxes on income, including provision for deferred income taxes of $1,185,000 in 1960 and $950,000 in 1959	20,458,000	19,964,000
	495,324,973	516,369,875
Earnings for the year	18,000,234	17,784,368
Cash dividends declared ($1.20 per share)	7,813,700	7,796,409
Earnings in excess of dividends	10,186,534	9,987,959
Earnings invested in the business at beginning of year	106,105,605	96,117,646
Earnings invested in the business at end of year	$116,292,139	$106,105,605

Your own dog food plant with no overhead

As easily as you say RALPH WELLS & CO., you can have *your own* private label ready-to-go dry dog food line . . . kibbled biscuits, meal, cubes, and expanded. WELLS provides the plant, the nutritionists, the production staff, the formula, and the complete product . . . packed under your label, shipped in full carload lots, or in mixed carloads with ingredients. You never tie-up a dollar in new equipment, additional overhead or payroll. WELLS is truly *your* subsidiary because WELLS does *not* market a dog food line of its own. Contact RALPH WELLS & CO. today . . . the one best source for *your* private label dry dog food line.

Write for data sheets on complete dog foods

RALPH WELLS & CO.
MONMOUTH, ILLINOIS
SOURCE OF THE BEST—FOR MAN'S BEST FRIEND

Thousands of swine worm eggs in one cubic inch of hog lot?

One female large roundworm lays up to 1,400,000 eggs a day...*
One female nodular worm lays 5 to 10 thousand eggs...
One female whipworm lays up to 5,000 eggs per day.

*KELLEY, GEORGE W., PH.D., U. OF NEBR. (VETERINARY MEDICINE, VOL. LI, NO. 3, P. 97, MARCH 1956)

Swine worms plant more eggs per acre than you could drill wheat. But, that's only part of the problem. Billions of those invisible eggs can live in the soil up to seven years...just waiting for the chance to grow up in your hogs (on your feed) and plant still another bumper crop of eggs!

Hygromix in the feed is the only worm control method on the market that helps strangle worm loss at the source. Hygromix kills adult worms and prevents them from laying new eggs. The same continuous killing action hits baby worms before they can grow to egg-laying maturity. Why fight the problem every now and then when you can control it every day with Hygromix? Try it!

HYGROMIX®
(S. hygroscopicus fermentation products)
ELANCO

Makers of STILBOSOL® (diethylstilbestrol premix) • Streptomycin Sulfate • Vitamin B_{12} • Micro-Pen® (special coated procaine penicillin G)

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SODIUM BENTONITE
PACIFIC MOLASSES
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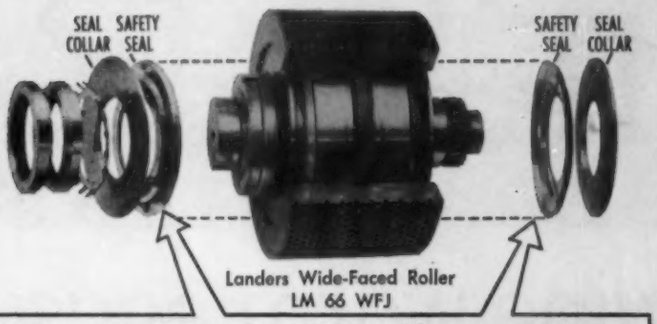
STONEMO GRANITE GRIT
CALF MANNA
NOPCO FEED SUPPLEMENTS
PROTAMONE
TAKAMINE ENZYMES
PILOT SECOND CLEAR FLOUR

INQUIRIES APPRECIATED

NEW! LANDERS GREASE SEAL COLLAR

COMPLETELY ELIMINATES the Inner Grease Seal Nut and Press Collar which together cost $10.80. These new Landers Grease Seal Collars cost only $3.00 each, and this is a one-time cost, as there is no wear on any part in the grease seal except the Safety Seal Discs, which sell for 35c each.



Landers Wide-Faced Roller
LM 66 WFJ

ONLY THE SAFETY SEALS (35c each) GET THE WEAR!

New all metal ground-joint grease seals seat themselves in a metal-to-metal bond that will stand much more heat than conventional seals and will not leak, rot, dry out, crack or break as your present seals will. There is no wear on the seal collars, only on the inexpensive safety seal discs. These seals cost only 35c each to replace and are tested to wear longer than your present seals.

Convert your present roller.....only $6.70
Seal replacement thereafter.....only 35c ea.

These new Landers seals will save you money in original cost, in less installation and downtime (with no spot welding to do) and less inventory to carry, as all you need to replace the seal are the safety seal discs. Gives positive bearing protection with no grease seal pop-outs.

COMPLETE ROLLER ASSEMBLY, WITH SEALS $109.85

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Write today for complete information

LANDERS MILL MANUFACTURING COMPANY
207 EAST BROADWAY FORT WORTH, TEXAS
LANDERS MACHINE COMPANY

FEED FIRM—Exterior of the B. N. Stone Feed Co. building is shown above.

Newspaper Stories Spread Word of Firm's Grain Bank

By Harold Severson
Feedstuffs Special Writer

Officials of the B. N. Stone Feed Co., Inc., West Concord, Minn., are convinced it not only pays to advertise but it pays to use newspaper publicity to the fullest extent.

Fred Stone, secretary-treasurer of the firm, says newspaper editors welcome a news story about new improvements or changes in operating methods.

"That was demonstrated recently when we installed additional equipment to make grain banking possible at our plant," he says. "We thought it was a good story so we told the editor of our weekly newspaper about it. Then a free lance writer got in touch with us and took several pictures and obtained some details about our new installation. As a result, two large daily newspapers in this area carried complete stories about the grain-banking program."

Mr. Stone points out the publicity didn't cost his firm a single cent and that it was worth hundreds of dollars as far as informing farm people of the B. N. Stone Feed Co. grain-banking setup.

"It's so easy to publicize different features of a feed firm's program that more dealers should take advantage of this program," Mr. Stone declares. "Editors of a large weekly or a daily newspaper will assign a reporter to get the story if you telephone them. The owner of a small weekly will appreciate it if you will write the story and give it to him. Then he has the privilege of re-writing or condensing the story to fit his requirements."

Mr. Stone has a weekly advertisement in the West Concord Enterprise which carries his own copy.

"We find that most people who read a local newspaper prefer advertisements which feature local names or local conditions," he declares. "My column is written in an informal manner and I think it carries greater weight with farmers than 'canned' advertising copy supplied by the feed manufacturer."

Mr. Stone is alert to the possibility of publicizing improvements in the feed plant whenever possible.

The firm was established eight years ago, being housed in a small building on the main street of West Concord. Most of the business people figured it would last only three months; others gave it six months to a year. Bucking strong competition from a firm which had been in business for many years, the Stones faced an uphill battle to attract customers.

Byron N. Stone, president of the firm, recalls sales were few and far between when the store was opened for business in September, 1952.

In fact, he recalls one winter day when the closing hour approached and he hadn't made a single sale during the entire day. So, he told Mrs. Stone, who was helping out with the bookkeeping and other work: "I'm going outside and coming back in five minutes to buy a bag of dog biscuits. We're not going to be 'skunked' as far as retail sales are concerned today."

That little stratagem wasn't necessary. A customer did come in about five minutes before closing time and he did buy a bag of dog biscuits.

"He was a trucker who used this as a way to get acquainted," Mr.

THE STONES—Principals of the B. N. Stone Feed Co., West Concord, Minn., are shown here in the firm's office. From the left, they are: B. N. Stone, Mrs. Stone and son Fred Stone.

GRAIN BANK — Grain banking plan of the B. N. Stone Feed Co., Inc., West Concord, Minn., is explained by this chart. Mrs. B. N. Stone, vice president of the firm, points out one of the features of the plan.

Stone recalls. "He wanted our trucking business and he got it. Since then we're giving him trucking costing us anywhere from $500 to $600 a month."

Flourishing Concern

Today the B. N. Stone Feed Co. has become a flourishing concern. It occupies its own modern feed mill, office and warehouse in the village. Equipment includes a Bryant 18-in. mill, two Sidney mixers, a molasses blender, a corn-drying unit, a 5,000-bu. bin, four Butler bins of 8 tons capacity each for finished feeds, a 26,000 lb. scale, a leg with a 2,000-bu. storage bin and flat storage of 60,000 bushels of government grain.

"This new equipment is a major factor in gaining trade," Mr. Stone says. "Having purchased and installed it, our next task was to let farmers know we had it. That's where these newspaper feature stories have been very helpful."

To acquaint farmers with the benefits of grain-banking service, the Stones prepared a special wall chart and hung it in the main office.

"This enables us to explain the advantages of grain banking in a hurry," Fred Stone says. "The Chinese had a proverb which went like this: 'A single picture is worth ten thousand words.' Actually, the chart is worth hours of sales talk."

The Stones feature "service with a smile."

"The customer is always right here," Fred Stone declares. "If a customer has a gripe, we go out of our way to make adjustments. We never lose a customer if we can help it."

On busy days when there's a lineup of customers, the Stones never keep a customer waiting. If he has shopping or other business uptown, they tell him to park his truck or tractor and the load will be emptied, the feed ground and mixed, and loaded into the vehicle. Customers really appreciate that extra service, the Stones say.

Promoting the feed business on a "we-do-all-the-work" basis has paid surprisingly good dividends for the Stones.

Fred Stone says three factors have entered into the successful operation of the business:

1. Choice of a good farming community. West Concord is located in an area where crop failures are almost unknown.

2. Installation of modern equipment.

3. Taking advantage of good public relations.

B. N. Stone says he lacks the time to get out into the country and meet farmers. "That's where my son Fred enters the picture," he declares. "He's scheduled to be out in the country at least half the time. No, we never high-pressure customers—we try to get acquainted and offer to help farmers with their problems, whether it's feed, seed or fertilizer. We like to think this has paid off in customer good will and increased sales."

Economic Trends in Trade to Be Covered At Washington Event

SEATTLE — Will there be a feed manufacturing industry in the future? Will feed manufacturers 10 years from now be exclusively in the feed manufacturing business? How can we shape public attitude toward feed medications?

These are just some of the questions which will be covered in a special panel discussion at the 1961 Washington State Feed Assn. convention Feb. 10 at the Leopold Hotel in Bellingham, Wash. The panel discussion of various economic developments and problems in the feed industry will be a highlight of the convention program. The American Feed Manufacturers Assn. is cooperating with the Washington group on the economic discussion program.

Several industry representatives and others will take part in the session.

The questions listed above are among those which will be discussed and will be considered further in question and answer sessions.

Another will be: "What will be the 1970 picture in the feed manufacturing business in the matter of size of manufacturers?" Still another is: "Who threw the additives in Mrs. Murphy's formula?—or how to destroy confidence in the industry."

Speakers who will handle the various topics will be announced later, according to J. G. Wilson, association manager, Seattle.

The convention will follow the Pacific Northwest Feed Mill Production School (sponsored by the Washington association), which will be held Feb. 8-9 at the Leopold in Bellingham.

Danish Prince Gorm Visits American Farms

CHICAGO—A member of the Danish royalty recently concluded a 10-day tour of the U.S. to observe American agricultural methods. He is His Highness Prince Gorm of Denmark, cousin of King Frederik IX of Denmark.

Prince Gorm is recognized as one of his country's leading scientific farmers and operates a 135-acre farm 25 miles from Copenhagen. He also owns a neighboring farm bought recently for experimental purposes. He specializes in breeding hogs, which contribute to Denmark's largest export; the country is second only to the U.S. in bacon production.

In addition to farming, Prince Gorm is a businessman. In keeping with the democratic traditions of Scandinavian royalty, he recently associated himself with the Lindinger Agro Co., a Danish firm which distributes agricultural chemicals produced by American Cyanamid Co., including antibiotic hog feed supplements, according to Dr. M. J. Harvey, regional manager for American Cyanamid.

NEW MILL BUILDING

OSKALOOSA, IOWA — Construction has started on the 60x74 ft. steel and concrete building to house operations of the Mahaska Feed & Grain Co. here. The Garden Construction Co. was awarded the contract in excess of $100,000. The building is expected to be completed by spring or early summer. Ben Groenendyk, Cedar farmer, and president of the company, said the new building will house 23 overhead feed and grain storage bins in addition to seed storage, cleaning rooms and office quarters. The plant will include three grain and other feed ingredient pits, 100 horsepower hammermill, 600 bu. sheller, mixer and molasses blender, seed cleaning and treating unit and elevators. Other facilities will include steel tanks, grain drying equipment and truck scales.

Lemanco Lowers the Beam to provide a New WEIGH BUGGY for the modern feed mixer

- Rolls easily even when loaded to capacity.
- Assures accurate weighing down to one-half pound.
- Full capacity beam easy to read
- Positive wheel brake.
- Two eight-inch mold-on-rubber wheels; two six-inch mold-on-rubber casters.
- Slide gate just forward of front wheels 8" x 17" operated by extension handle from rear of buggy.
- Two models—890 lbs. and 1,280 lbs. at 40 lbs.

Compact Scale Permits Clustering of Ingredient Bins Two or More Deep

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ERIEZ low-cost, non-electric, permanent, Erium-powered MAGNETIC SEPARATORS

PLATE MAGNETS—for installation in feed tables, chutes, etc. All sizes . . . many strengths!

GRATE MAGNETS—for surge or choke-fed lines in hoppers, floor openings, ducts, etc.

MAGNETIC PULLEYS—for automatic removal of tramp iron on lines conveying materials on belts of non-magnetic substance.

MAGNETIC DRUMS—a completely housed unit for automatic removal of both large and small iron contamination. Easily installed in spouts, chutes, spiral conveyors, etc.—where materials are not conveyed on belts.

Will Eliminate That Deadly Tramp Iron Hazard!

- Assure product purity
- Prevent machinery damage
- Reduce mill downtime
- Help prevent fires and explosions
- Protect company reputation

Eriez Magnetic Separators offer you the widest choice of the lowest cost, yet most effective protection for your entire milling and processing lines. Engineered to provide peak performance for your exact application.

Eriez Magnetic Separators are completely non-electric; no wires, attachments or fuses. No operating costs. Quickly and easily installed. Powered by Erium, an exclusive, high-quality, permanent magnetic power source specifically designed and energized by Eriez.

Also Available—AC operated HI-VI Vibratory Feeders and Bin Vibrators for hazardous, dusty locations. Fully approved by Mill Mutual.

GET BIG FREE FACT FILE of information on ERIEZ Magnetic Separators and Vibratory Feeders and Bin Vibrators. Protect your product, plant and profits!

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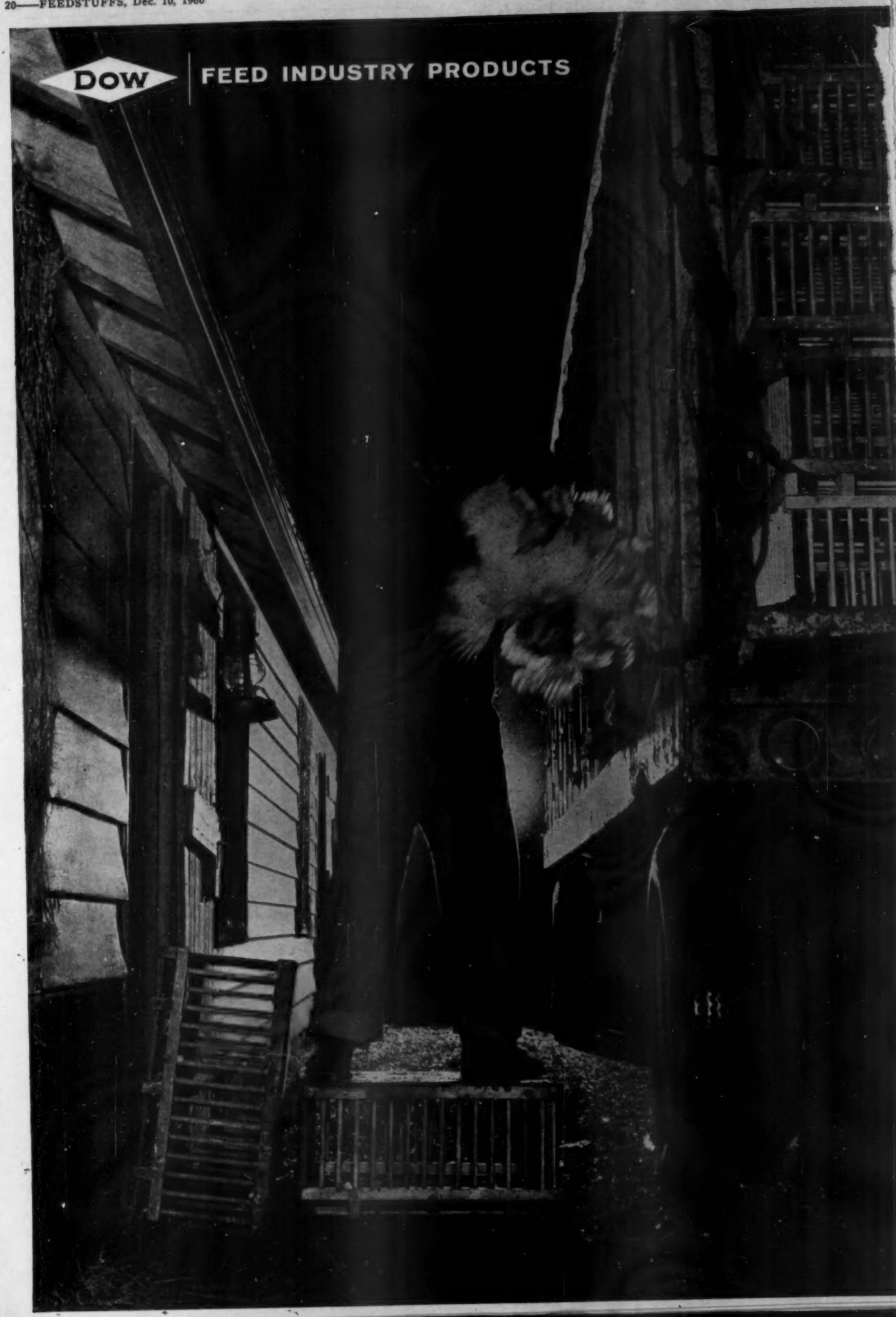
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FEED INDUSTRY PRODUCTS

ZOAMIX®

gives growers approved coccidiosis control right up to market time!

New development in coccidiostats requires no withdrawal period . . . won't harm layers or farm animals, if accidentally eaten . . . provides the best protection against all types of coccidiosis!

Zoamix containing Zoalene added to your feed formula gives broilers better protection against coccidiosis, allows greater feed efficiency, allows faster weight gains, *plus* an extra margin of safety available in no other coccidiostat!

Zoamix has been approved for feeding to broilers right up to the time they are shipped to the market! That means no withdrawal period, no need to switch to a new feed formula prior to shipment, and the grower can act fast to market his birds at the most profitable time.

Zoamix will not injure laying hens and other farm animals if accidentally fed to them. It's safe to mix with any chick starter or broiler mix without affecting the ingredients, nutrients, or other additives in the formula. It's safe for mill workers or growers to handle.

And best of all, Zoamix is unexcelled as a coccidiostat. In fact, feed manufacturer's research laboratory tests show Zoamix is superior to eight of nine leading coccidiostats . . . and equally as effective as the other one—yet superior to that one in feed conversion and rate of gain, as shown in the following table:

RATE OF GAIN AND FEED CONVERSION COMPARISONS

Zoalene* Compared with Following Coccidiostats		A	B	C	D	E	F	Totals
Number of Comparative Tests		29	15	16	23	5	6	94
NUMBER OF TESTS IN WHICH	Zoalene Superior for Weight Gains	28	14	16	14	5	6	83
	Other Coccidiostat Superior for Weight Gains	1	1	0	8	0	0	10
	No Difference in Weight Gains	0	0	0	1	0	0	1
	Zoalene Superior for Feed Conversion	26	10	14	15	2	6	73
	Other Coccidiostat Superior for Feed Conversion	1	2	2	7	2	0	14
	No Difference in Feed Conversion	2	3	0	1	1	0	7

*the active ingredient in Zoamix

Zoamix is available now in commercial quantities at centrally located points throughout the country. Write Dow for assistance in labeling, or for technical help. The address: THE DOW CHEMICAL COMPANY, Agricultural Chemicals Sales Department, Midland, Michigan.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

For the Successful Dealer

Financial and Credit Management

By John E. Sawyer
Wirthmore Feeds, Inc.

Financial management is the keystone on which all other management functions are built. Without sound financial management all is lost, and no other phase of the operation can succeed.

Sound financial management involves the application of intelligent policies in regard to accounts receivable, inventories and investment in land and buildings, automobiles and trucks and equipment.

A feed dealer must have financing adequate to permit the growth of his business to a point that will pay him a fair return on his investment, and provide him with a reasonable standard of living.

Under-financing may result in increasing current debt in order to finance unwise credit extension, price cutting and in providing excess services. Eventually, under-financing may result in the failure of the business.

Sound financing calls for the careful projection of the cash requirements of the business, and the advance arrangement for adequate financing to provide necessary funds. If an individual has a problem in resolving this phase of his business, he should seek competent help.

The accounts receivable ledger, at the average retail feed store, soon comes to represent the highest percentage of the money invested in the business. Good judgment in credit extension, adequate controls, and proper policing are required to keep this important phase of your business in balance.

It is important, too, to provide an adequate reserve for bad debt losses, which inevitably occur—even under the most rigid of systems. (The matter of credit extension will be referred to later in more detail.)

Inventories

Inventories should be the equivalent of dollars and cents. Are they in your case? Feed and grains, and allied merchandise are purchased for the purpose of conversion into cash, at a profit to the buyer. If any merchandise is allowed to get out of condition or damaged, it not only becomes less attractive, but it actually loses value.

Buying policies should be reviewed periodically so that only saleable feed and other merchandise are purchased, and in quantities that will turn over rapidly. Once in the warehouse, "first in—first out" should be the rule.

If goods begin to accumulate age, they should be discounted, if necessary, to move them, as their value will rapidly deteriorate. It is far better to have a reasonable percentage of the purchase price in the till, than to have valueless merchandise in the warehouse.

A problem that often arises in connection with financial management is looking into fixed assets, the proceeds from sales of merchandise. The need for a new building or a new piece of equipment becomes apparent, cash is available at the moment, and it is used to pay for the capital improvement.

Cash on Hand

Many times, the cash which is free at the moment will be needed to meet a current obligation at a later date, or to pay for a seasonal inventory expansion.

This depletion of working capital restricts the ability of the business to meet its obligation—and, as a result, impairs its credit rating. A solution to this problem is to make sure that capital expansion is not made from current free cash, if it is evident that this cash will be needed later on to meet current obligations. It is better to borrow for the purpose of capital expansion, and to repay on an orderly, amortized basis, than to attempt to borrow once working capital has been impaired.

Financial management is the application of sound business practices to the financial side of the feed business. Help is available to the feed dealer, if he will ask for it.

This can be obtained from a trusted financial advisor who might be a banker or an accountant—or, perhaps, a financial executive of his feed supplier.

Controlling Expenses

Related to financial management is the cost control aspect of operating management.

Are you getting the maximum efficiency from your employees, and properly controlling other expenses of operation.

Periodically, a comprehensive review of these factors should be made to see just where you stand. A comparison of current operating costs with the figures of comparable earlier periods is an excellent way of checking progress. A comparison with a friendly competitor or a dealer in a nearby area may provide a bench mark as to how you stand on a relative basis.

I don't think I need to say that, in these highly-competitive times, improvement in earnings may well come more easily from cost savings, than from additional tonnage.

Under operating management, attention should be given to this matter of a fair return for service rendered. You surely will agree that we are in a period of rising costs. Warehousing, bulk storage, grinding, mixing, trucking, bookkeeping, collection

EDITOR'S NOTE: *In a talk before the West Virginia Feed Dealers Assn., John E. Sawyer, vice president of Wirthmore Feeds, Inc., Waltham, Mass., described the "Successful Feed Dealer in 19??." In doing so, he covered several aspects of feed business management. Among these were financial and credit management. The accompanying article includes excerpts from Mr. Sawyer's talk.*

"We increased grain business 86% with our Fitzpatrick grain storage and handling system!"

Says George Brenneman, Manager, Wayne Feed Supply Co., Inc., Wakarusa, Indiana.

He is very pleased with their Fitzpatrick designed, manufactured and erected whole grain storage and handling system. The new facilities, cleverly incorporated with the old, include two 9000 bu. grain storage tanks, one 1350 bu. wet holding bin, and one 1000 bu. drier. These units are serviced by an 85′ elevator, 65′ over bin screw, 65′ under bin screw, and a 2000 bu./hr. car unloader. A screw under the driveway was extended 30′ to permit unloading trucks directly into the drier. This expansion program has doubled production intake capacity.

Last year Brenneman increased grain business 86% with poor crop conditions prevailing. His trading area has been considerably expanded. With the added storage facilities he can now bank corn after the peak of the wheat harvest. Summing up, Mr. Brenneman states, "We think Fitzpatrick did a fine job for us. Our investment is paying substantial dividends!"

Fully automated feed manufacturing plant, bulk feed or grain storage and handling facilities, or mill components . . . whatever you are considering . . . it will pay you to talk with Fitzpatrick. Write today for brochure!

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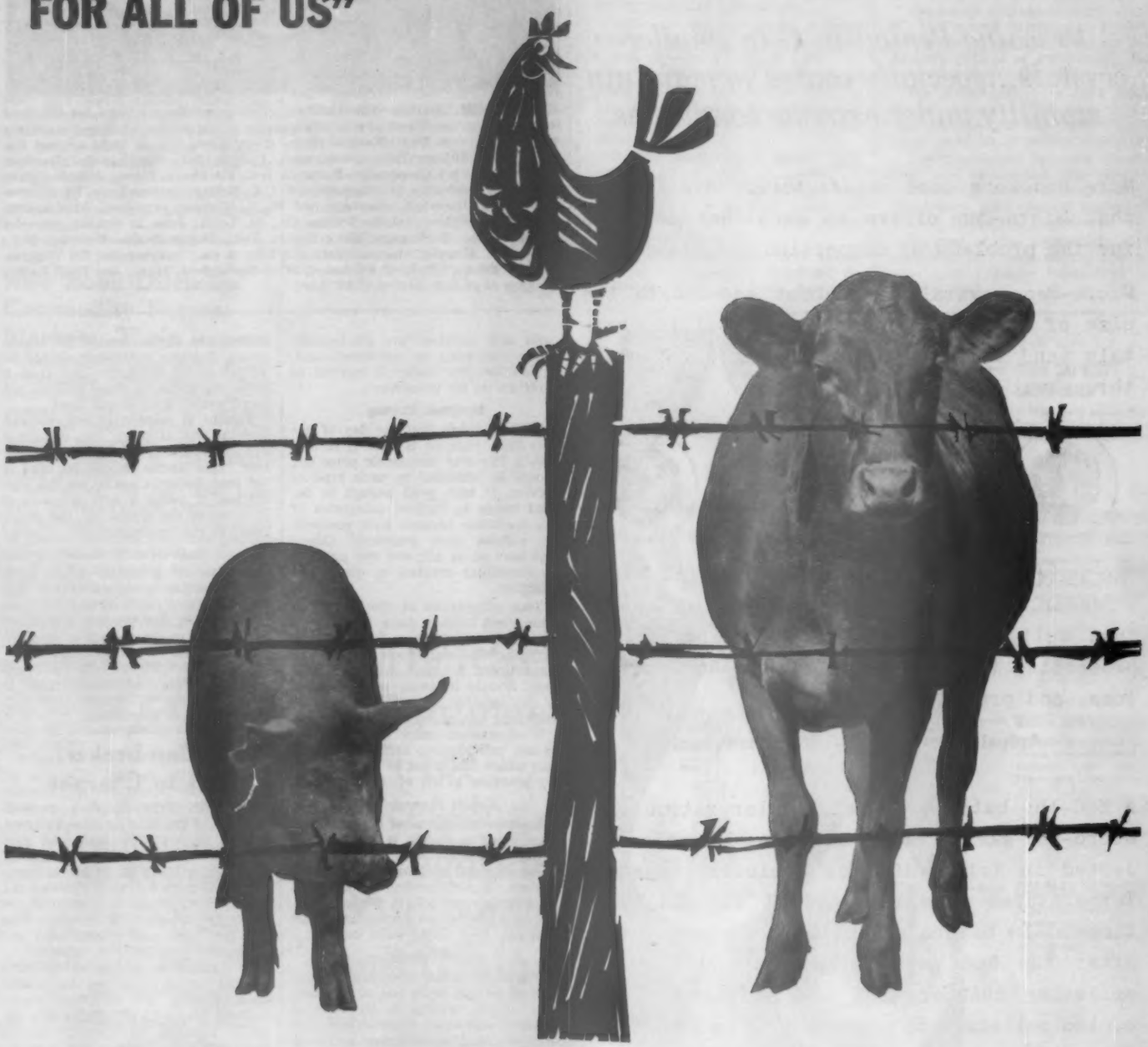
FEED MILL ENGINEERING MANUFACTURE ERECTION

U. E. FITZPATRICK & COMPANY, BURKET, INDIANA

"MORTON'S GOT NEW MIXING SALTS FOR ALL OF US"



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Three new mixing salts have been developed by Morton research. All contain a new and improved anti-segregation agent. All trace mineral compounds in these new mixing salts are water insoluble, and each of these three products is backed by Morton quality control.

New Poultry Mixing Salt is the most flexible product of its kind on the market. Containing higher levels of essential trace minerals for poultry, Morton Poultry Mixing Salt can be used in varying amounts for optimum results from your feeds.

New Swine Mixing Salt for growing swine contains a high level zinc content to promote maximum growth and aid in the prevention of parakeratosis.

New Multi-Purpose Mixing Salt contains six specially selected trace minerals used in feed for cattle, sheep and mature hogs.

In addition to these three new Mixing Salts, Morton also offers Iodized Mixing Salt and Special Mixing Salt. All Morton Mixing Salts are backed by extensive research and testing. Morton Mixing Salts are available anywhere in the country. For more information about any of them, ask your Morton representative or write:

Morton Salt Research Laboratory, Woodstock, Illinois

MORTON SALT COMPANY

NUTRITIONAL RESEARCH DEPARTMENT
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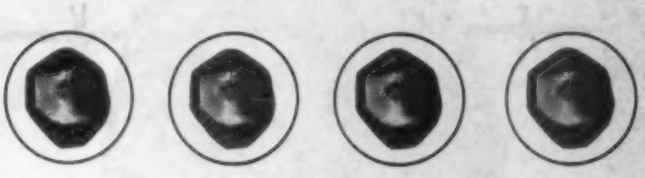
Micro-Pen®

Procaine Penicillin G in smaller crystals...specially coated to maintain stability under extreme conditions

More and more feed manufacturers are finding that Micro-Pen offers an excellent solution for the problems of dispersion and stability.

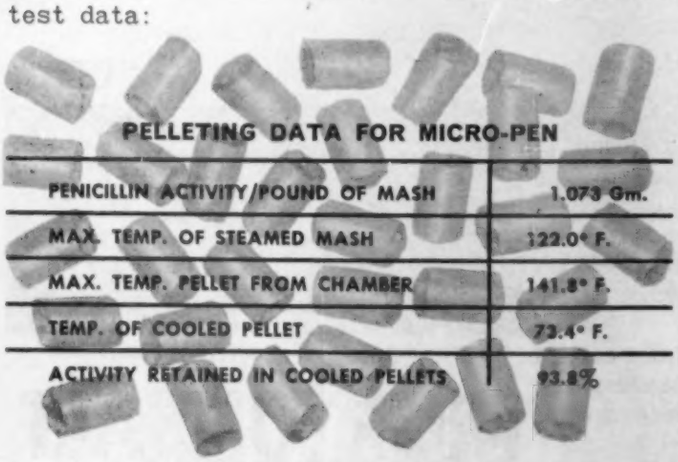
Micro-Pen crystals are about one-fourth the size of ordinary feed-grade penicillin crystals, and thus, they disperse more uniformly throughout the ration.



The potency of each minute crystal is given a longer life by a unique manufacturing method that fully coats each and every crystal... protecting it from the effects of heat, moisture, and pressure.

Actual pelleting test confirms excellent stability of Micro-Pen:

A 500-lb. batch of basal broiler ration with Micro-Pen was pelleted. Feed samples were collected in triplicate for penicillin assays. Temperatures were recorded at the following times: 1) before pelleting, 2) immediately after the hot pellets were taken from the pelleting chamber, and 3) at the time the cooled pellets were bagged. Here is the actual test data:



PELLETING DATA FOR MICRO-PEN

PENICILLIN ACTIVITY/POUND OF MASH	1,073 Gm.
MAX. TEMP. OF STEAMED MASH	122.0° F.
MAX. TEMP. PELLET FROM CHAMBER	141.8° F.
TEMP. OF COOLED PELLET	73.4° F.
ACTIVITY RETAINED IN COOLED PELLETS	93.8%

For more research data, write...

ELANCO

ELANCO PRODUCTS COMPANY • A DIVISION OF ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA

PUBLIC RELATIONS—The 1961 programs of public relations for the feed industry were developed at a recent meeting of the public relations committee of the American Feed Manufacturers Assn. From left to right around the table are: William Pearce, chairman, Cargill, Inc., Minneapolis; Gardner Norcross, United Cooperative Farmers, Inc., Fitchburg, Mass.; Joseph Ferris, Doughboy Industries, Minneapolis; Dr. J. L. Krider, Central Soya, Ft. Wayne, Ind.; W. T. Diamond, secretary, and W. E. Glennon, president, AFMA, Chicago; J. D. Sykes, Ralston Purina Co., St. Louis; John L. Schlick, Murphy Products Co., Burlington, Wis.; Ernest Neill, Merck & Co., Rahway, N.J.; William C. Murphy, vice chairman, Eli Lilly & Co., Indianapolis; Eli Wiggins, Eastern States Farmers' Exchange, West Springfield, Mass., and Dick Kathe, director of public relations, AFMA.

costs and overhead are all expense items that must be recovered—and, in addition, the dealer is entitled to a return on his investment.

Realistic Pricing

While I think that the day of unduly high mark-up is past, nevertheless, a fair and reasonable price tag should be attached to each type of service. It isn't good enough to defend losses in various categories of the operation because your competitor follows these practices. Often, this isn't so at all; and the problem is sometimes created by your own practices.

Your attendance at the West Virginia Feed Dealers Assn. meeting indicates that you have a desire to participate with your fellow dealers and competitors, to your mutual advantage. Should it, then, be so difficult to get together on a local basis and eliminate the problem?

It oftentimes takes the leadership of one individual to arrive at a solution which can result in better industry practices in the whole of an area.

Credit Management

Another management function that I am going to discuss is that of credit management. Here is an area that presents a real challenge to most feed dealers. A well-publicized cash discount policy can help in reducing outstanding credit and emphasize to the customer that credit costs money.

Credit Policies

The credit policy of individual feed dealers ranges from one of overcaution, which results in the loss of sales, to one which is excessively liberal—which inevitably means losses. Sometimes, this results in losses too large for the enterprise to stand. Somewhere between these two extremes lies the proper and sound approach to good credit practice.

Credit management starts at the point of sale and continues until the money is in the till. Good practice demands that one have sufficient knowledge of the prospective creditor to determine whether or not he is a sound credit risk.

Sometimes, this means more than just a word-of-mouth type of investigation. It is important to know about his ability to pay, before goods are delivered.

Also, it is important that the method and time of payment be clearly understood, at the time of the transaction. Regular statements should be mailed to all accounts—and then a follow-up made on those who do not remit within their credit limit.

Finally, a method of enforcement such as an attorney or collection agency should be used as a last resort. This device should be used if the feed dealer is not to get the reputation of being a soft touch—and thus being victimized by the deadbeats in the community.

Collection Methods

All too often, unjust claims arise from overdue accounts. Firm, but fair, collection methods can minimize credit losses, and prevent a business failure due to the neglect of this important phase of management.

The opportunity of help by banks and production credit associations, in the financing of larger accounts, should not be overlooked.

Feed Man-Broker Replies to Charges

WASHINGTON—Replying to Federal Trade Commission charges of receiving unlawful brokerage on purchases for his own account, Jack M. Rawlings, a McComb, Miss., businessman, has asserted that "it was not my intent to in any way conduct my brokerage business in conflict with the law." He has discontinued the challenged practice, FTC reports.

In addition to trading as Meredith Milling Co. in operating an animal feed business, Mr. Rawlings trades as J. M. Rawlings, Jr., Broker. In the latter capacity he sells cottonseed meal and hulls, soybean meal and related products for various seller-principals on a commission basis, FTC said.

The FTC's Oct. 13 complaint alleged that he frequently buys these products for use in his own feed mill and accepts brokerage or discounts in lieu of brokerage on such purchases, which is forbidden by Section 2(c) of the amended Clayton Act.

ADDS NEW EQUIPMENT

BUFFALO LAKE, MINN. — New processing equipment at the Farmers Cooperative Elevator & Mill here now permits the firm to manufacture feed in pellet, crumble and mash forms with molasses added.

CHECKERBOARD GRAIN COMPANY

Buyers and Sellers of

MILLFEEDS, GRAINS AND GRAIN PRODUCTS

CHICAGO KANSAS CITY ST. LOUIS MINNEAPOLIS

NO BLARNEY—IRISH HORSES FED SUGAR

The Irish Sugar Co. is now marketing a feed mixture containing 33% raw sugar to feed fine bred horses in that country, famous for superior horses and trainers.

Eugene H. Graugnard of F. A. Graugnard & Sons plantation, St. James, La., learned of the development in a conversation with Gen. M. J. Costello, general manager, Irish Sugar Co., recently. General Costello said that Louisiana State University experiments with using surplus raw sugar in swine rations and the good results obtained prompted the work in Ireland on rations for pedigreed horses.

Some of the LSU tests were made in cooperation with the Graugnard brothers.

New Book Discusses Commodity Futures Markets, Their Impact

CHICAGO—A story of the growth of commodity futures markets, measures of their effectiveness and a glimpse of their future are provided in a new book, "Futures Trading Seminar, History and Development," released recently by the Chicago Board of Trade.

Information for the book came from the 1959 Futures Trading Seminar sponsored by the Chicago Board of Trade. The book describes current operations of future markets and much of the discussion centers around new methods of evaluating the role of futures trading as an essential institution in the modern exchange system.

It's a compilation of the work of five agricultural economists including formal comments and criticisms by eight other economists and four members of the grain trade, plus discussion by an audience of economists and traders.

Principal papers were contributed by Henry H. Bakken, department of agricultural economics, University of Wisconsin; Dr. Roger W. Gray, food research institute, Stanford University; Dr. T. A. Hieronymus, department of agricultural economics, University of Illinois and Drs. Allen B. Paul and William T. Wesson of the market organization and costs branch of the marketing research division of the U.S. Department of Agriculture.

Publisher of the book is Mimir Publishers, Inc., Box 2082, Madison 5, Wis.

R. E. McClaine Joins Baughman Company

JERSEYVILLE, ILL.—Richard E. McClaine has been named central district manager of the Baughman Mfg. Co., Jerseyville, according to James E. Cadle, assistant general manager.

R. E. McClaine

Mr. McClaine's territory will include all states east of the Mississippi River and north of Mississippi, Alabama, Georgia and North Carolina. Following graduation from Ohio University, Mr. McClaine worked with the Scripps-Howard newspapers and served in the army. Prior to joining the Baughman organization, he was on the public relations staff, aviation division, of the state of Ohio.

Mr. McClaine will represent the entire line of Baughman equipment, which includes truck mounted fertilizer spreaders, ice control spreaders, self-unloading truck and transport bodies, conveyors, livestock feeders and other products.

Undigested Sorghum Grain Holds Nutrients, Kansas Study Shows

MANHATTAN, KANSAS — Sorghum grains that pass through the digestive tracts of cattle retain all or most of their nutrient value, tests at Kansas State University indicate.

Researchers D. B. Parrish and R. W. Kelly fed rats washed whole sorghum grain that had passed through the digestive tract of a Holstein heifer and found that the rats grew essentially as well on the grain that had been through a cow as when fed fresh sorghum grain.

Three groups of rats were fed in the experiment, two groups on reclaimed, and one on fresh sorghum grain. Rations of all three groups were supplemented to bring content to 15%. Except for one of the groups fed reclaimed grain, all got a complete vitamin mix. Sorghum grain is principally an energy feed expected to require supplements.

The rats on reclaimed grain with vitamins and protein added gained 179 gm. each with a feed conversion ratio of 4.01. That compared with 186 gm. each and 3.99 conversion ratio for those fed similarly on fresh grain. The difference is not significantly great, Dr. Parrish said.

Those on reclaimed grain without vitamins gained only 138 gm. with a feed conversion ratio of 4.38.

Dr. Parrish said that the reclaimed grain appeared to have lost little, if any, nutrients while passing through the digestive tract of the ruminant animal.

Earlier studies have shown that as much as one third to one half of sorghum grain will pass through cattle, unless it is ground, rolled, or crimped—and even then some of the grain is not digested.

Pigs and sheep, with teeth better adapted to "grinding" sorghum, do better on the whole grain, however.

Minnesota Turkey Men Award Scholarship

ST. PAUL — Larry J. Klaustermeier, Lester Prairie, Minn., has been awarded the newly established Sonstegard Brothers scholarship of $300 for the academic year 1960-61.

The award was announced by Keith N. McFarland, director of resident instruction at the University of Minnesota's College of Agriculture, Forestry and Home Economics.

Mr. Klaustermeier, a 1960 graduate of Lester Prairie high school, is a freshman at the university. He plans to major in poultry husbandry.

The Sonstegard Brothers scholarship was established this year by Goodwin J., Donald M. and Oleen S. Sonstegard, who operate Paynesville Turkey Industries, Paynesville.

Purpose of the scholarship is to encourage and assist worthy students who have a major interest in the poultry field.

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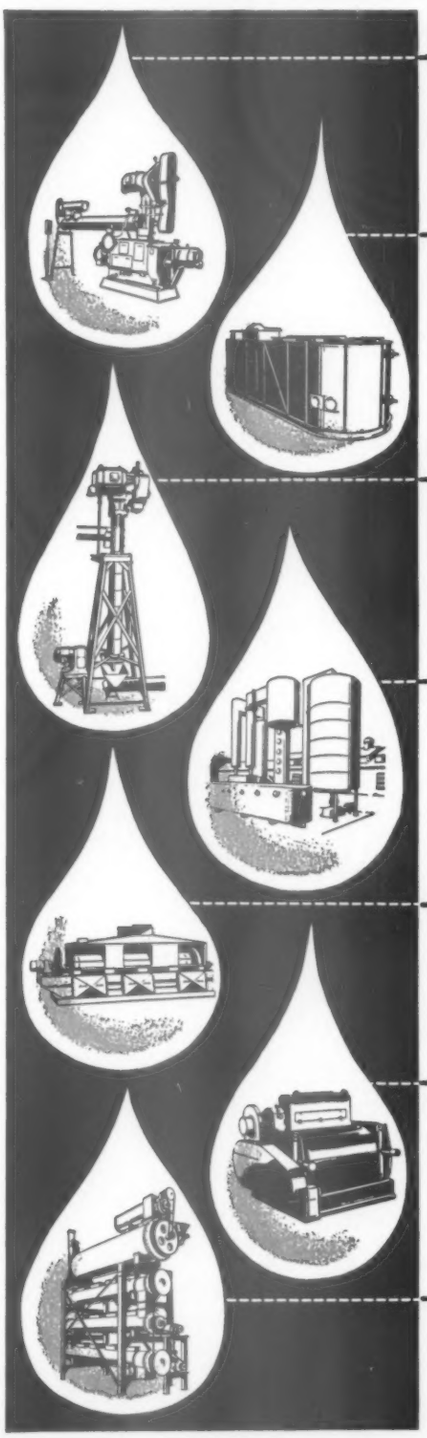

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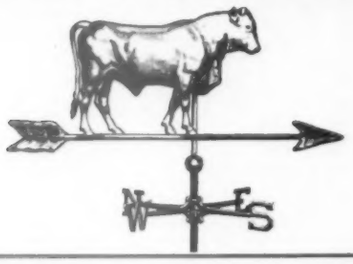

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Patents Issued by U.S. Patent Office

2,951,759

Animal Growth Stimulant. Patent issued Sept. 6, 1960 to John R. De Zeeuw and Frederick Sauer, Terre Haute, Ind., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware. A growth stimulating non-ruminant animal feed which comprises a complete animal diet together with at least about 0.001 mg. and not greater than about 1.0 mg. of a glucocorticoid per kilogram of feed.

2,951,760

Growth Accelerating Substances. Patent issued Sept. 6, 1960 to Herbert G. Luther and Warren M. Reynolds, Terre Haute, Ind., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware. A growth-accelerating animal feed concentrate comprising from about 98 to 75% of a tetracycline type antibiotic and from about 2 to 25% of an orally active estrogenic substance.

2,953,429

Methods for Sterilizing Granular Food. Patent issued Sept. 20, 1960 to Albert E. Shiffler, Irwin, Pa., assignor to Best Feeds & Farm Supplies, Inc., Washington, Pa., a corporation of Pennsylvania. A method of uniformly heating and sterilizing organic granular material for consumption by humans and animals, said heating destroying infestation in the granular materials; which comprises rapidly heating the granular material to a temperature greater than 130° F. but less than the toasting temperature of the materials; said granular material being heated while in a thin, turbulent layer; immediately moving the heated materials away from the heating area with a minimum loss of heat to a heat insulated receptacle; maintaining the heated materials in said receptacle in a unitary mass and non-turbulent, heat insulated state and in the absence of additional heat for about 5-15 minutes at a temperature greater than 130° F. to destroy infestation in the heated materials; said mass and said state permitting a transfer of heat among the heated materials to effect a substantial uniform temperature throughout the mass of heated materials; and periodically removing some of the sterilized materials from the receptacle as additional heated materials are supplied to the receptacle.

2,955,981

Prevention of Iron-Deficiency Anemias in Suckling Mammals. Patent issued Oct. 11, 1960, to Wayne Henry Linkenheimer, New City, N.Y., assignor to American Cyanamid Co., New York, N.Y., a corporation of Maine. A method of preventing iron-deficiency anemia in suckling mammals which comprises the step of administering parenterally to the lactating mother an iron chelate of ethylenediamine tetraacetic acid during the suckling period.

2,956,924

Coccidiosis Treatment Compositions Containing Triazine Derivatives and Methods for Using Same. Patent issued Oct. 18, 1960 to Joseph J. Ursprung, Waterford, Conn., assignor to Chas. Pfizer & Co., Inc., Brooklyn, N.Y., a corporation of Delaware. A feed supplement for combatting coccidiosis in poultry comprising a poultry feed and as the principal active ingredient a compound selected from the group consisting of 3,5-diketo-2,3,4,5-tetrahydro-1,2,4-triazine and alkali and alkaline earth metal salts thereof.

2,956,923

Anthelmintic Compositions and Process. Patent issued Oct. 18, 1960 to Robert E. Kent, Waterford, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware. A process for the veterinary control of helminthiasis primarily due to nematodes which comprises the oral administration to an animal suffering therefrom of from about 5 to 50 mg./kg. of body weight of a compound selected from the group consisting of 2-thienylmethyl 2-(2-imidazolinyl) sulfide and the pharmaceutically acceptable acid addition salts thereof.

2,958,600

Animal Feeds and Methods of Producing Same. Patent issued Nov. 1, 1960 to Benjamin H. Thurman, New York, N.Y., assignor to Benjamin Clayton, doing business as Refining, Unincorporated, a sole proprietorship. A process for the detoxification of a cottonseed product to reduce the free gossypol therein, which process includes the steps of: incorporating into said cottonseed product about .1-3% of an amide-radical compound; and detoxifying the resulting product by heating same to a temperature of about 85-120° C.

A process for improving the nutritive value of vegetable oil meals and for otherwise improving same as a feed product for ruminant animals, which process includes the steps of: adding to said meal about .1-3% of an amide-radical compound and a material increasing the conversion of such compound into protein nitrogen in the stomach of ruminant animals, said material comprising from a fraction of a percent up to 10% of gum-containing foots separated from a crude vegetable oil, said gum-containing foots being substantially completely soluble in petroleum ether, the gums of said foots being substantially free of alkali degradation.

Research Grant

CAMDEN, ALA. — The Lower Coastal Plain substation of the Auburn agricultural experiment station in Camden has received grants from four companies making possible research on the pelleting of Coastal Bermuda grass.

The grants include $2,000 from Mississippi Chemical Co., five tons of nitrogen fertilizer from Spencer Chemical Co., $1,000 from Centrala Farmers Cooperative and $2,000 from Tennessee Coal and Iron Division of U. S. Steel.

The study is concerned with the effect of clipping frequencies, curing procedures and pelleting of Coastal Bermuda grass on utilization of nutrients by cattle, according to V. Lavern Brown, substation superintendent.

Work Proceeds on Southern States Mill

BALTIMORE, MD.—October, 1961, is the target date for completion of Southern States Cooperative's new $1.5-million feed mill at Baltimore. Construction work on the project already is under way by crews from Weitz-Hettelsater Engineers of Kansas City.

The plant will turn out 80,000 to 90,000 tons of feed annually on a one-shift basis. All modern machinery and production methods, including numerous innovations and refinements in feed manufacturing, are embodied in its design, officials said.

One innovation at the plant is designed to improve the quality of crumbled and pelleted feeds. To produce pellets which are harder and pelleted feeds which have an absolute minimum of "fines," special drying equipment is being included in the pelleting line along with the usual cooling equipment. Addition of the dryer will permit use of more moisture in the conditioning process of the feeds and make for a tougher pellet.

Project Facilities

Included in the project are the mill building, storage warehouse, boiler facilities, service quarters, liquid storage and complete loading and unloading facilities.

No outside storage facilities for grains and ingredients are planned. About 98% of all ingredients coming into the plant will be handled mechanically, much of them in bulk, with all unloading being done inside the plant. Truck loading facilities will be substantially improved over those of the present mill and the facilities for loading bulk trucks will be greatly enlarged.

The mill will be a "batch" plant, with ingredients for each 3-ton batch being electronically selected, weighed, and mechanically conveyed to the mixers.

The new structure will replace the present obsolete 27-year-old mill, which was the first wholesale manufacturing facility to be constructed and owned by Southern States.

Cooperative Expands

MACON, MISS. — The Mississippi Federated Cooperatives announced purchase of the Imperial Cotton Oil Co. properties here where the cooperative plans to locate a metal fabricating plant to manufacture farm equipment such as poultry and hog feeders, feed storage bins and other items. Approximately 60 workers will be employed. Noxubee County citizens are being asked to purchase $70,000 of preferred stock in Mississippi Federated Cooperatives.

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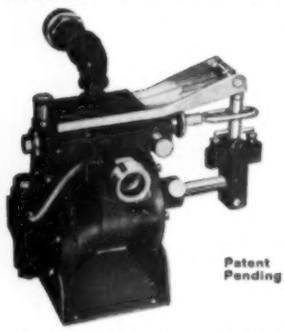

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Robert W. Strong and store in Earlville

Services essential to modern farming are provided by Strong and Strong Check-R-Mix mills and grain banks in Earlville (above) and Ottawa. Jerry Schmanske, sales and serviceman, is in the foreground of the Ottawa plant (below).

W. A. Strong and store in Ottawa

"We built our Purina Service Centers to serve modern farming in our area"

—says R. A. STRONG, of Strong and Strong, Earlville, Ottawa, and Rollo, Illinois

Service and leadership both have been provided to agriculture by Strong & Strong, Purina Dealership serving three markets in Northern Illinois. Farm income has increased as a result and the Dealership has grown.

Two Check-R-Mix mills, one in Earlville and one in Ottawa, provide a service needed in the grain-livestock farming of the area. Grain-banking and bulk-delivery services save time and money for farmers and add to efficiency in the feedlot.

Leadership is provided by three Purina-trained service men, who make regular calls to help with feeding and management, and through meetings and demonstrations to acquaint farm folks with Purina Programs. Results of leadership show in the growing use of the Purina "Pig Parlor" plan of producing pork and the introduction of caged hens for market egg production.

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Are Hard Pellets Necessary For Broiler Feeding?

"The data presented here suggest that a certain amount of 'fines' tends to increase rather than decrease feed consumption and under commercial conditions might be beneficial."

By Douglas Hamm and E. L. Stephenson
University of Arkansas

Research workers in general have agreed that there are benefits to be received when broilers are fed an all-mash diet in pellet form. This has, of course, encouraged the use of pellets and also has prompted much work in search of adequate "pellet binders." Much of this search has been based on the premise that in order to receive the full nutritional effect of the "pellet response" all feed offered the broiler should be in the form of relatively hard or firm particles. With the use of bulk handling equipment this means that in order to withstand handling breakage a truly hard pellet must leave the manufacturer's curing bins. In some cases the search for a harder pellet was brought about solely by customer demand. Feed men sold their customers on the "apparent" nutritive value of pellets. Due to the added expense of pelleting they had to charge a nominal fee for pelleting. Then, when a customer paid this fee and subsequently received a bin of 50% fines, the customer was disgruntled. This in turn placed a demand on the manufacturers to produce a harder pellet. This situation was confounded further by the demand for more energy per pound of feed. This energy was added at the expense of fiber, which is in itself a good binder, or by the use of added fats which refuse to be pelleted in a satisfactory manner.

There is not complete agreement among researchers as to why pellets are beneficial. In 1956 Allred et al reported, in effect, that possibly the pelleting process imparted some beneficial chemical effect to the feed. The following year these same workers carried their work still further and indicated that it was the cereal portion of the ration that was most beneficially affected by pelleting. These reports indicated that pellets were better than ground pellets and that ground pellets were better than mash as a broiler feed form. In 1959 Hamm and Stephenson reported on the results of five feeding trials of two to eight weeks duration which showed that the beneficial effect of pelleting was only apparent in its effect on feed consumption. Chicks reared on pelleted feeds grew faster simply because they consumed more feed. This better growth also manifested itself in better feed efficiency. These findings were in agreement with the findings of such workers as Harper, Treat and Stephenson, Lindblad et al, Bearse et al and others who reported that pelleting favorably affected high fiber rations. The compaction of the fibrous diets allowed for higher consumption and, therefore, resulted in greater growth.

In 1958 Hulett reported on the results of a series of experiments involving studies of pellet binders and pellet hardness. He reported no correlation was apparent between hardness of pellet and growth rates; however, in all trials reported he found a statistically significant difference between the growth rates as affected by mash vs. pellets.

The feeding trials reported on herein were designed to determine if it was necessary to feed broilers a pelleted diet that was composed of all pellets or could various levels of fines be tolerated.

Experiment

Three trials of eight weeks duration were conducted at the University of Arkansas Experiment Station, Fayetteville, Ark., between Nov. 1, 1959 and Aug. 20, 1960. In all cases straight run broiler type chicks were randomized at one day of age into experimental groups. The chicks in the first trial, however, did not receive the various forms of the ration used in these experiments until they were four weeks old. The numbers of birds involved in each trial are shown in Table 1. The University of Arkansas broiler ration used is shown in Table 2. This diet was modified in trials 1 and 2 by substituting 3% PACO for the 3% fat. In trial 3, 1½% PACO replaced a like amount of added animal fat. These substitutions were made in order to increase the hardness of the pellet. In trials 1 and 3 diets were fed free choice in 5 ft. trough type feeders. In trial 2, circular hanging feeders were used. Wood shavings were used as litter throughout all trials.

All feeds used were mixed in an upright 3,000-lb. batch mixer. Pelleting was done with a California Master Model mill using a 3/16" die. Sufficient steam was used to insure economical operation of the mill. Pellets were cured in burlap sacks standing separately in a cool room overnight. Ground pellets were rerun through the same hammer mill and screen originally used to grind corn for the ration. Experimental design, growth and feed efficiencies are shown in Table 3.

Specific densities of all rations fed in trials 1 and 2 were determined. Individual pellet (as contrasted to quantity) densities were determined using a precision balance with a wire rack suspended in water. These densities were double checked against both an oil (of known specific gravity) displacement technique and by floating in graded concentrations of ferric chloride solutions. Average density of individual pellets was 1.32 gram/cc. Average densities of the various diets are shown in Table 4. Average pellet hardness as measured by a Stokes hardness-tester was 4 kg.

Discussion

The results obtained in trials 1, 2 and 3 are given in Table 3. In trial 1, the greatest gains were made with chicks fed the diet containing 75% pellets and 25% ground pellets while the more efficient feed utilization was obtained with the diet containing 50% of each form of feed. In trial 2, there was no difference in chick growth or efficiency of feed utilization obtained with diets containing 50%, 75% or 100% pellets. These three diets also supported chick gains that were statistically greater ($P<.05$) than the growth produced by the mash diet. In trial 3, optimum growth and efficiency of feed utilization were obtained with a diet containing 50% pellets and 50% mash. In this trial, however, the differences in growth and feed conversion were not significantly different from those produced with diets containing the 25% and 75% pellet mixtures.

As shown in Table 4, individual pellets were more dense than mash and the pelleting of a portion of the diet tended to increase its density; thus a partial explanation of response due to pelleting could have been increased density. This is, however, not a complete explanation since the most dense material was the individual pellet and, on a theoretical basis, if density were the complete answer, should have produced superior results.

Previous work by Hamm and Stephenson (1959) indicated that the response from pelleting was due to an increase in diet consumption rather than improvement in nutritive value of the feed; therefore, the data presented herein suggests that a certain amount of "fines" tends to increase rather than decrease feed consumption and under commercial conditions might be beneficial.

From the results obtained in these trials it would appear that presence of fines in a pelleted ration is beneficial rather than deleterious. While the results reported herein do not involve a sufficient number of birds to be sufficiently conclusive to make industry wide recommendations at this time, these results do indicate strongly that a ration containing a mixture of fines and pellets is superior. The ideal ratio of fines to pellets was not completely pinpointed but lies between 25% and 60% fines in the diet.

This article is printed with the approval of the director, University of Arkansas Experiment Station.

AUTHORS—Dr. E. L. Stephenson, left, animal nutritionist at the University of Arkansas, and D. H. Hamm, right, research assistant, the authors of this article, are shown checking pelleting work in their research. Dr. Stephenson received his B.S.A. and M.S. degrees from the University of Tennessee in 1946 and 1947, respectively. He received his Ph.D. degree from Washington State University in 1952. He came to the University of Arkansas in 1949 as an assistant professor in the department of animal industry and veterinary science. He was promoted to associate professor in 1954 and to full professor in 1957. He has done considerable nutritional study with poultry. Mr. Hamm was a research assistant in the Arkansas department of animal industry and veterinary science from 1958 to June, 1960. He assisted with research in poultry nutrition. He is presently at Louisiana State University on a National Heart Institute Research Fellowship where he is working on a Ph.D. degree in poultry nutrition. Mr. Hamm received his B.S.A. and M.S. degrees from the University of Arkansas in 1957 and 1960, respectively.

TABLE 1. Numbers of Birds on Trials

	Trial 1	Trial 2	Trial 3
Number of treatments.	5	6	5
Numbers of replications	2	2	4
Numbers of birds per pen	80	80	200
Total number on trial	800	960	4000
Age, start of trial	28	0	0
Age, end of trial	63	63	63

TABLE 2. University of Arkansas Broiler Basal Diet

Ingredient	Lb.	Gm.
Corn	58.5	...
Soybean oil meal (solvent 5%)	25.3	...
Alfalfa leaf meal	2.0	...
Fish meal	5.0	...
Dried whey	2.0	...
Ground limestone	1.4	...
Dicalcium phosphate	2.0	...
Salt	0.5	...
DL-methionine	0.1	...
Animal fat (special tallow)	3.0	...
$MnSO_4$	...	8.0
Riboflavin (30 gm./lb.)	...	1.4
Vitamin A (20,000 I.U./gm.)	...	10.0
Vitamin D_3 (20,000 I.C.U./gm.)	...	2.25
B-vitamin concentrate (2-5-12-50)*	...	25.0
BHT	...	5.7

*Two gm. riboflavin, 5 gm. pantothenic acid, 12 gm. niacin, 50 gm. choline per pound of supplement.

TABLE 3. Design, Growth and Feed Efficiencies

Diet form	Trial 1 Growth lb.	Trial 1 Effic. F./gain	Trial 2 Growth lb.	Trial 2 Effic. F./gain	Trial 3 Growth lb.	Trial 3 Effic. F./gain
Mash	...	...	2.86	2.43	2.54	2.35
¼ pellets	2.69	2.41	3.03	2.30	2.61	2.28
½ pellets	2.82	2.34	3.13	2.31	2.64	2.27
¾ pellets	2.95	2.41	3.14	2.32	2.63	2.29
All pellets	2.71	2.47	3.16	2.31	2.57	2.33
Ground pellets	2.68	2.42	3.14	2.31	...	...

TABLE 4. Densities of Diets

Diet form	Density (gm./cc)
Mash	0.778
25% pellets	.782
50% pellets	.804
75% pellets	.780
100% pellets	.632
Ground pellets	.712
Individual pellet	1.319

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SELLIN' SAM By Jim Zilverberg

"—But I tell you I'm NOT one of the escaped convicts—I sell dog food!"

Pathogen-Free Swine Herds Grow in Iowa, Other Midwest States

AMES, IOWA — More than 100 Iowa swine herds are in various stages of development now as specific pathogen-free herds, reports Maynard Spear, extension veterinarian at Iowa State University.

A number of other states in the Midwest are making rapid progress in the development of pathogen-free herds, too. Some advantages cited include faster growth, more marketed pigs per litter, and better feed efficiency.

The oldest herd in the Iowa program started natural farrowings last June and will try for certification in December as Iowa's first naturally-farrowed pathogen-free swine herd.

Pathogen-free herds are being developed to provide an effective preventive for the growing expense of disease in swine herds. Pigs for this program are taken from sows by hysterectomy and raised in sterile laboratories. Farmers who buy them must clean and disinfect their buildings and lots and allow no swine on their farm for at least six weeks before the new pathogen-free pigs come on the place.

The specific diseases from which these pigs are guaranteed free are atrophic rhinitis, virus pig pneumonia, hog cholera, brucellosis, leptospirosis, bloody dysentery, transmissible gastro-enteritis, and all external parasites, says Dr. Spear.

Naturally-farrowed herds raised from hysterectomy laboratory pigs must prove they remain free of these disease agents before they are certified as pathogen-free in their own rights. Other minimum standards are required in addition to the health status.

Dr. Spear said the specific pathogen-free swine appear to be the most satisfactory way yet developed for stopping losses from virus pig pneumonia and atrophic rhinitis in swine herds. Many of those now raising pathogen-free swine are farmers who have lost a large part of their herds to disease, or who have found their farms so infested with atrophic rhinitis that it is impossible to raise pigs profitably.

At the present time, the pathogen-free herds in Iowa include representatives of Duroc, Yorkshire, Black Poland, Spotted Poland and Chester White purebred herds, in addition to some commercial herds. The first to seek certification for its naturally-farrowed herd is a commercial operation, Dr. Spear said. Other swine men interested in eliminating their serious disease problems will be able to buy naturally-farrowed certified pathogen-free pigs as the foundation of their new swine program when these herds are certified.

Dr. Spear said minimum production standards will have to be met by the pathogen-free pigs before their herds are certified.

The pathogen-free programs began in Iowa less than two years ago. Permits for 18 laboratories have been issued in the state, Dr. Spear said, and seven of them are already in operation. Permits for the establishment of these laboratories are issued from the University of Minnesota where the pathogen-free hysterectomy technique was developed. The technique has been patented so the university can control its operation and require maintenance of standards.

Veteran Feed Man To Lecture at O.A.C.

GUELPH, ONTARIO, CANADA — J. Gordon Davidson, M.B.E., B.S.A., retired co-ordinator of the feed division of the United Co-operatives of Ontario, has been appointed special lecturer on feeds and feeding in the department of animal husbandry at the Ontario Agricultural College, Guelph, Ontario.

J. Gordon Davidson

A graduate of the O.A.C. in 1922, Mr. Davidson has had a long and distinguished career in the livestock feeding business. Beginning as assistant poultry promoter in Ontario, he became poultry promoter in Prince Edward Island. In 1925, he joined the Maple Leaf Milling Co., and organized its first feed business in Toronto.

He organized new feed plants in Port Colborne and Montreal. During World War II, he was loaned to the dominion government as feed controller for Canada, and was included in the royal honors list in recognition of his outstanding services to his country in wartime.

After a year with the Canadian wheat board, he returned to the Maple Leaf Milling Co. as manager of its feed department. Retiring in 1955, he became co-ordinator of the feed division of the United Co-operatives of Ontario, which position he held until recently.

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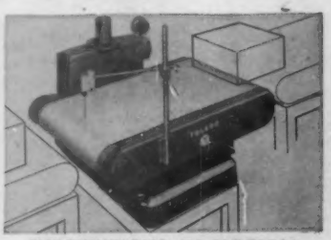

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Work Going Forward on 1961 Production School

KANSAS CITY—Work is already under way on special material to be presented at the 1961 Feed Production School, it was pointed out by Eric Carlson, Ralston Purina Co., the general chairman of next year's school.

Sub-committees are being appointed and will gather material on important aspects of feed plant operation to be presented in small discussion or classroom-type sessions at the 1961 school. The annual three-day event is set for Sept. 11-13.

The various sub-committees and their chairmen and their assignments are:

Definitions—Jerry Karstens, Feed Age—This committee developing standard terminology and definitions relating to finished products, ingredients, processes, etc., with the aim of better understandings of terms throughout the industry.

Research—Robert Wornick, Chas. Pfizer & Co.—Will develop and coordinate research projects dealing with finished products, ingredients, processes and packaging.

Education—Dr. Harry Pfost, Kansas State University—Will develop and coordinate industry-wide educational programs and will compile data on production, looking toward publication of a production handbook.

Process Flow—Stanley Juscen, Wirthmore Feeds—To develop and constantly up-date process flow designs for most economical manufacture of quality feeds.

Equipment Standards—Will Brooks, Illinois Farm Supply Co.—Develop and up-date equipment standards as required for up-dated process flow designs.

Plant Layout and Design—Ted Stivers, T. E. Stivers Co.—Develop and up-date layout and design for economical manufacture of quality feeds.

Systems and Procedures—Dr. V. John Brensike, U.S. Department of Agriculture—Develop and up-date systems and procedures for operation of plants in most efficient manufacture and distribution of feeds.

Operations Standards—Hew Chandler, Consumers Cooperative Assn.—Develop and up-date operating standards as dictated by up-dated process flow designs, equipment standards and plant layout and design.

Material Flow—Dr. Andrew Jenike, University of Utah—Develop and update programs for study of flow characteristics of ingredients and finished products; suggest areas of research to find solutions to flow problems.

Publicity—Roger Berglund, Feedstuffs—Develop programs to call attention to activities of Feed Production School, Inc.

Facilities—Lou Bosso, Feed Production School, Inc.—Select and obtain facilities for attainment of school objectives.

Product Control—Max Cooley, Hoffman-Taff—Develop and up-date product control systems in manufacture and distribution of feeds as dictated by the updated standards of various types.

These sub-committees will be gathering information in the months ahead, and this will then be presented at the 1961 school. Other features also are planned.

Looking further ahead, the school has named Oak B. Smith, Wenger Mixer Mfg. Co., as general chairman for 1962. This is the first time that a general chairman has been named two years in advance.

MOST EGGS LAID IN MORNING

EAST LANSING, MICH.—Eight out of every 10 eggs are laid before noon, according to Michigan State University poultry researchers. They advise gathering eggs at least four times in the morning and once in late afternoon to maintain high egg quality.

The Michigan study showed that 39% of all eggs are laid before 8 a.m., 31% are laid between 8 and 11 a.m., 18% between 11 and 1 p.m. and 12% between 1 and 4 p.m.

Poultry Condemnations Discussed in Arkansas

LITTLE ROCK, ARK.—A meeting to discuss condemnations of chickens in Arkansas poultry plants was held in Little Rock recently. The meeting, which brought together officials of the USDA and a number of poultry producers, was arranged by the poultry department of the Amalgamated Meat Cutters and Butcher Workmen of North America (AFL-CIO).

Some Arkansas poultrymen have complained recently that USDA inspectors are condemning too many chickens.

Shirley W. Barker, Chicago, director of the union's poultry department, said that there have been "some misunderstandings and confusion" over the application of the federal poultry inspection law.

He said the union does not want to "see anything done that would jeopardize or bring about relaxation of enforcement of the inspection law."

He added that discussions at the meeting indicated a "lack of communication between the department and the industry," and noted there were no indications that condemnations on the whole in Arkansas have been excessive.

Mr. Barker said he had heard, however, that condemnations in some flocks had run from 35 to 50%. He said he did not know the Arkansas average.

He said while first reports to the union indicated that the high condemnation rate in Arkansas was quite widespread, the situation is not as bad as officials were led to believe. In fact, he claimed, the union has found "evidence that in some cases the USDA has been too lax in condemnations."

Arizona Feed Tonnages For 1959 Announced

MESA, ARIZ.—Formula feed sales accounted for 169,335 of a total of 304,506 tons of commercial feed sold in Arizona in 1959, according to a report from the office of the state chemist, University of Arizona Agricultural Experiment Station here.

Tonnages of formula feeds are: Beef cattle feeds, 42,779; beef cattle supplements, 17,511; calf feeds, 1,703; dairy cattle feeds, 51,158; horse feeds, 2,307; poultry feeds, 52,473; rabbit feeds, 977, and swine feeds, 1,447.

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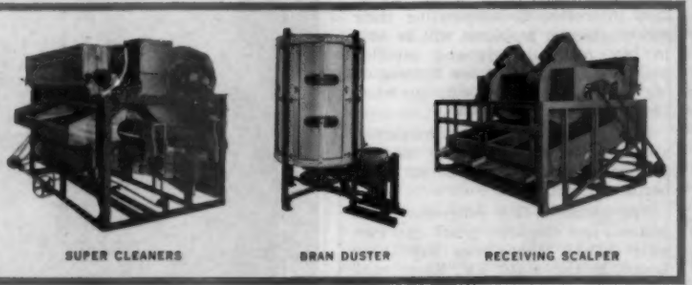
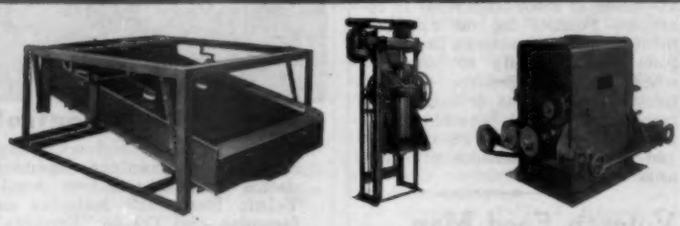

SUPER CLEANERS — BRAN DUSTER — RECEIVING SCALPER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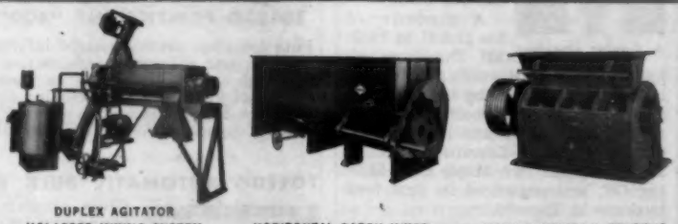
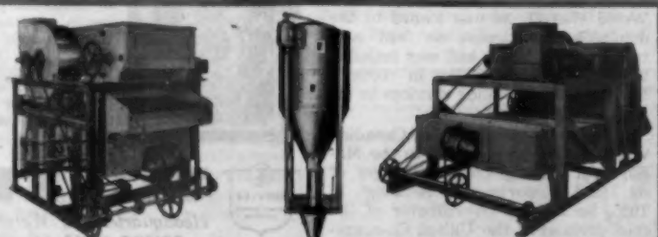
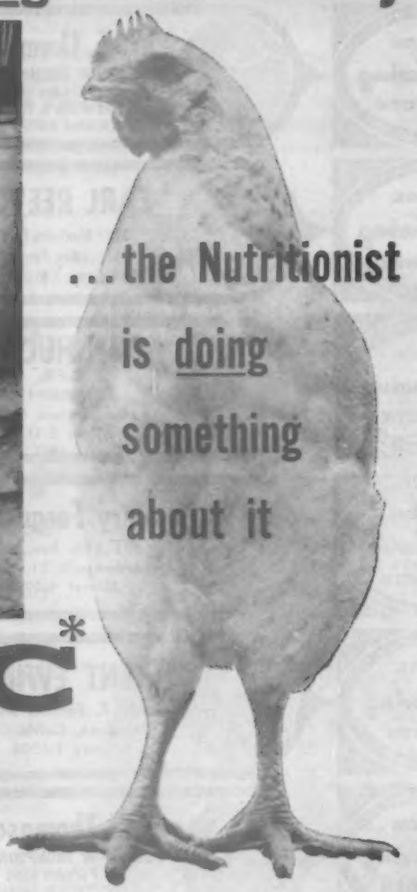

DUPLEX AGITATOR MOLASSES MIXING SYSTEM — HORIZONTAL BATCH MIXER — CORN CUTTERS & GRADERS


SEED CLEANERS — VERTICAL SEED MIXERS — AIR FINISHER

Everyone is talking feed efficiency



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FARMERS GRAIN CO.—Pictured here is the Farmers Grain Co., Piper City, Ill. Note Manager Tom Gibb in front of the firm's Pamco equipped bulk truck that plays a big part in the business.

They Work Hard For New Customers

By Al P. Nelson
Feedstuffs Special Writer

The farmer came to the Farmers Grain Co. custom mill at Piper City, Ill., with a big load of grist. On top the load, he had several bags of his favorite concentrate. It was not the brand carried by the Farmers Grain Co.

The mill operator cheerfully took the bags of concentrate, ground the grist, then dumped the farmer's concentrate into the mix slot. He chatted amiably with the customer during the mixing period.

It cost that farmer 30¢ cwt. to have his grain ground and feed processed here. A customer using the brand of concentrate sold by Farmers Grain Co. pays only 15¢ cwt. for grinding and mixing.

"We are glad to accommodate farmers who have attachments to concentrates other than our own," says youthful Tom Gibb, manager, "but we figure these fellows have to pay for that privilege. We are the only feed mill in town, and some of these farmers, ten, 15 miles out, like our grind and mix service. But they are tied sentimentally or otherwise to another brand of concentrate. Apparently, some farmers don't mind paying the extra mixing cost—at least for a while."

EXTERIOR VIEW—Pictured here are the elevator and grain drier (lower right) of the Farmers Grain Co., Piper City, Ill.

However, Mr. Gibb points out that every now and then one of these farmers gets tired of buying concentrates elsewhere, hauling them back and forth and then paying an extra mixing price. "Often he listens to our sales presentation of the merits of our feeds," says Mr. Gibb, "and then suddenly he is using our brand of concentrate, paying a lower mixing price, saving himself labor, and being happy with the results.

"We figure that accommodating such farmers is good business for us. We win a lot of them over to our brand of concentrate. And even those who still stick to their favorite concentrate brand buy fertilizer or other items while their feed is being processed at our mill."

Mr. Gibb says that he is aware that some feed mill managers do not accept a grind and mix order when the farmer buys concentrate elsewhere. He wouldn't want all grind and mix customers to buy concentrates elsewhere, but he claims that by playing along with such customers, he comes out with more business in the long run.

"A mill manager will spend money for advertising and sales promotion without hesitation," Mr. Gibb says, "so why not spend a little time and effort grinding for the farmer who gets his concentrate elsewhere? This builds good will and gives you a chance to talk the farmer into eventually switching to your brand."

Mr. Gibb also cooperates with a few other dealers in the area who do not have mixing facilities. They may get a large order from a customer for a special mix which they cannot fill from store stocks. Mr. Gibb will grind and mix for these dealers on some special orders, and this builds good will with his competitors, too.

A couple of years ago the custom mill was modernized. At that time a Fairbanks weigh buggy, a Prater

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BETTER SERVICE — Weigh buggy pictured here helps Farmers Grain Co. provide customers with faster and more efficient service.

hammermill, a 2-ton mixer, cob crusher, and 15-ft. screw conveyor were added, and various improvements made to the mill structure. The total cost was $48,000.

Due to the new equipment and better service, custom mill volume went up considerably. Outside a separate office building Farmers Grain Co. has a 50-ton Fairbanks-Morse scale.

Mr. Gibb likes to do field sales work. Accompanied by a territory salesman, he frequently visits farmers in his area and consults with them about poultry and livestock feeding problems.

Quite frequently, too, he has feeder meetings. These are usually held in a local restaurant, and begin with a complete dinner. Farmers like to dine out now and then, Mr. Gibb says, and attendance is good—about 30-35 for each meeting. Mr. Gibb holds separate dinner meetings for hog, poultry, dairy and cattle feeders. By confining each meeting to one type of feeder, more intensive feeder education can be accomplished, he reports.

"Feeders who attend such meetings appreciate the opportunity to voice their problems and listen to scientific feeding programs recommended by us and our suppliers," Mr. Gibb says. "Every feeder can get profitable suggestions from attending a meeting of this type."

Much of the firm's feed volume is now being delivered in bulk. For such delivery the firm has a 7-ton Pamco equipped truck. Quite a few hog and cattle feeders, however, like to call for their own feeds, and get a discount for this service. The firm's minimum delivery charge is $2.

"As soon as dairymen invest in proper storage facilities, I think our bulk business will increase still more," reports Mr. Gibb. "Quite a few hog and cattle feeders have adequate storage, and the dairy and poultry men are thinking that way, too, since they can save money using the bulk feed service."

The feed mill also has seed cleaning and seed treating service. Equipment includes a Clipper cleaner and a Gustafson seed treater. Particularly in late winter and early spring the seed department is very busy. Farmers who come to get seed cleaned and treated also are in the market for fertilizer, and some of them buy feed.

"In a business like this we have to have several lines which will attract the farmers at various seasons," reports Mr. Gibb. "We also have to be accommodating, hoping to win up to 75% or more of the farmer's feed, fertilizer and seed business through such service."

The Farmers Grain Co. also has a grain elevator adjacent to its feed mill. The elevator has a storage capacity of 235,000 bu. Part of the elevator equipment includes a Campbell grain drier. Thus grain brought in can be dried to proper levels for use in the feed mill or the elevator, and at very small cost per bushel to the customer.

MIXER—A Farmers Grain Co. employee operates Prater mixer pictured here.

NEW PLANT OCCUPIED—Melos Manufacturing Co., Des Moines, maker of the Melos Mobile Mill, has moved into its new plant at 4487 Delaware Ave., Des Moines. The new plant, pictured here, has a total area of 14,420 sq. ft., including front offices. The plant has been equipped with several pieces of new production equipment. The company has been producing mobile milling equipment for over 35 years.

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Factors Influencing Values of Trace Elements in Feedstuffs

By Dr. George K. Davis
University of Florida

There was a time when simple analysis of a feedstuff for the amount of given trace element present in it satisfied the nutritionist as to the adequacy or inadequacy of that feedstuff to meet animal requirements for the trace element in question. I think you will all admit that this situation is no longer true. The necessity for a proper balance of trace elements and of the macroelements in the diet as well as the influence of organic factors upon the availability of trace elements has become a major concern in the evaluation of feedstuffs for their nutritive value for various livestock species.

In discussing some of the factors which influence trace elements, let me first talk about copper. Copper deficiency is a well-known entity. It is of particular concern with ruminant animals where it is most likely to occur. Although the requirement for copper was first demonstrated by Wisconsin workers in 1927-28, the appearance of frank copper deficiency in livestock was not appreciated until some years later.

The appearance of copper deficiency as might be expected is associated with low copper intakes. Copper values in feedstuffs below 5 ppm. will result in copper deficiency in ruminant animals. In monogastric species the requirement level is probably somewhat lower, perhaps below 3 ppm.

The fact that other factors might enter into the picture became apparent when it was realized that copper deficiency symptoms were developing in animals on pastures which contained well above 5 ppm. of copper. Still the evidence for copper deficiency was apparent in the fragile bones, graying of the haircoat, the anemia, the accumulation of iron in the liver ending in extreme cases in the development of scours and death.

Presence of Molybdenum

British workers suggested that this might be due to the presence of molybdenum in the pasture and subsequent work has confirmed that the presence of molybdenum in the diet has an antagonistic action toward copper and the presence of as much as 5 ppm. of molybdenum may result in acute copper deficiency symptoms although the diet may contain 5-7 ppm. of copper. Higher levels of molybdenum may result in a more intense copper deficiency.

In an attempt to use this action of molybdenum, Dick, working in Australia, suggested that the copper which was apparently causing enzootic jaundice might be counteracted by including molybdenum in the diet. When sheep were given molybdenum and placed on a diet of oat straw there was no beneficial effect from the molybdenum. However, when alfalfa hay was used in the nutritional attempt to control copper toxicity, addition of molybdenum was successful and the copper was eliminated from animals which had exhibited a heavy accumulation of this element. Out of this work came the observation that apparently the sulfate ion is necessary for the interaction between copper and molybdenum. The mechanism for this interaction is far from clear.

More recently, investigators at Johns Hopkins' McCollom Pratt Institute have suggested that perhaps the sulfate is necessary for proper copper function in that the presence of sulfate prevents the formation of unavailable copper sulfide and therefore serves to permit the functioning of copper. Certainly the picture is far from complete since the mechanism whereby copper promotes and molybdenum interferes with normal bone formation, or the mechanism whereby copper is prevented from functioning in the synthesis of hemoglobin, and why this interference results in the accumulation of iron in the liver, remains to be explained.

EDITOR'S NOTE: *Dr. Davis is the author of the second in a series of papers presented at the 1960 annual meeting of the Animal Nutrition Research Council in Washington, D.C., and reproduced by Feedstuffs. The series was introduced last week with an article, "Critical Evaluation of Methods for Measuring Protein Quality," by Dr. Dewey Johnson, Jr., Lime Crest Research Laboratory, Newton, N.J. Other ANRC papers to follow will be concerned mainly with vitamin reference standards. Dr. Davis is research professor of nutrition, University of Florida, Gainesville.*

Organic Factors

More recently there has accumulated evidence that organic factors may be important in the utilization of copper from diets fed to animals. Earlier work by Mills in England has suggested that certain copper organic complexes are more readily absorbed from the digestive tract and that consequently copper from these sources is more effective in meeting the copper requirements of livestock. On the other hand, in our experiments we have found that in certain areas where copper analyses of forage indicate the presence of 10 to 12 ppm. of copper, copper deficiency symptoms are evident in cattle ranging from fading of the haircoat, or achromotrichia, to a major disruption in the reproductive cycle.

In these instances it has been possible to demonstrate that an extract from the forage, obtained by submitting it to the high pressure of a Carver press, contained nitrogenous materials which will combine with copper and prevent or interfere with utilization by animals.

This characteristic of forage varies with time and with the stage of maturity.

It is apparent in our studies in which we have followed the progress of this chelating action, that as the plant matures the chelating actions disappear. Thus far we have been able to demonstrate the presence of chelates in several grass species and in Louisiana White Dutch clover.

In considering the availability of trace elements one is forced to admit that very little is known about the availability of cobalt and in ruminant animals, where cobalt is converted to vitamin B_{12} in the rumen, there is very little evidence of interference except from studies on vitamin B_{12} synthesis.

It would appear that the only function of cobalt in animal metabolism, that has as yet been demonstrated, is as a part of vitamin B_{12}. Consequently, any factor which may interfere with the synthesis of vitamin B_{12} in the rumen may be considered as having an influence on the availability of this element.

It has been possible to show that with increasing levels of molybdenum the cobalt utilization in terms of B_{12} formation is reduced. The fact that

this interference can be overcome by incorporating additional cobalt in the diet suggests that the action of the molybdenum may be indirect and upon the bacteria concerned with the B_{12} formation rather than in a direct antagonism towards cobalt.

I would point out that there is a condition known as "Phalaris staggers" which apparently responds to cobalt supplements when administered to animals receiving a diet that contains, on an analytical basis, adequate amounts of cobalt. Phalaris species are used as forage in this country as well as in Australia and there is some suggestion there is present, in the plants, a chelating mechanism which prevents the utilization of cobalt. The addition of supplemental cobalt to the diet has a remedial action.

Zinc Discussed

The third element which I should like to discuss in this respect is zinc. All of you are well acquainted with the evidence which has been presented for the interaction of zinc and calcium and the increased requirement of zinc that has appeared with increased levels of calcium in the diet.

I should like to point out to you that more recent work appearing in the literature suggests that the presence of chelating mechanisms in protein sources may also have a marked influence on the action of zinc in the diet. The presence of soybean oil meal in the diet has been associated with an increased requirement of zinc by poultry by Dr. Kratzer and his associates at the University of California at Davis. He has been able to show that incorporation of EDTA into the diet will relieve this apparent sequestering action of the soybean oil meal.

More recently, Dr. Forbes of Illinois has reported that incorporation of a milk protein, casein, in the diet, in place of soybean oil meal, may lower the zinc requirements. High levels of calcium may be fed with low levels of zinc without any evidence of parakeratosis developing, even though the levels of zinc are reduced below the 30 ppm. generally considered as minimum on the soybean, protein type of diet.

Still more recently, investigators at South Carolina have reported on the effects of sesame meal and indicate that some sesame meals may have an even more severe sequestering action against zinc than soybean oil meal and produce zinc deficiency when incorporated into the diets containing well above the 35-45 ppm. of zinc considered adequate on a soybean oil meal diet.

Toxicity Alteration

I should like to present some results which Dr. J. T. McCall and I have developed using casein and soybean oil meal protein as the source of the protein. We have worked with rats, and results indicate that the toxicity of zinc may be markedly altered, depending upon the source of protein in the diet.

These results indicate that when soybean oil meal protein is incorporated, levels of zinc of 2,500 ppm. are tolerated without any adverse effect. And levels as high as 5,000 ppm. may be included in the diet without causing changes in the blood picture which occur with lower levels of zinc on a casein diet.

There is also evidence that simply increasing the level of protein from casein will have a protective action against the higher level of zinc.

I think it only fair to point out that the syndrome which develops from the high levels of zinc is characteristic of the syndrome which we associate with a copper deficiency. It may be that under these conditions absorption of zinc and accumulation in the liver has an antagonistic action against copper, producing resultant changes which are essentially those of a copper deficiency.

I think it must be evident from this presentation that there are a number of factors which influence the nutritional effect of a mineral element in the diet. I have not gone into the influence of such factors as calcium ratio with various mineral elements, the influence of fluorine nor the factors of solubility which have a marked influence. All of these must be considered in an evaluation of the nutrient level of a given feedstuff.

What I have tried to present is the evidence that there are factors such as balance of mineral elements and factors such as the protein level and perhaps presence of certain organic sequestering agents which may have an equally important influence upon the nutritional utilization of a given element. Unless these factors are considered it is likely that the evaluation of a given feedstuff may be grossly in error.

Sugar Cane and Beet Production Estimated

WASHINGTON — U.S. production of sugar cane for sugar and feed was estimated Nov. 1 at 7,887,000 tons—down 3.5% from the forecast of a month earlier, the U.S. Department of Agriculture reports.

Still, the 1960 crop is a record one —569,000 tons greater than production last year.

Sugar cane harvest in Louisiana is about two weeks later than usual.

Sugar beet production prospects dropped 1% during October and, as of Nov. 1, was said to be 3% below the record 1959 tonnage but nearly one third above average. Production of sugar beets for sugar is estimated at 16,576,000 tons—less than 1959 production of 17,015,000 tons but well above average production of 12,-642,000.

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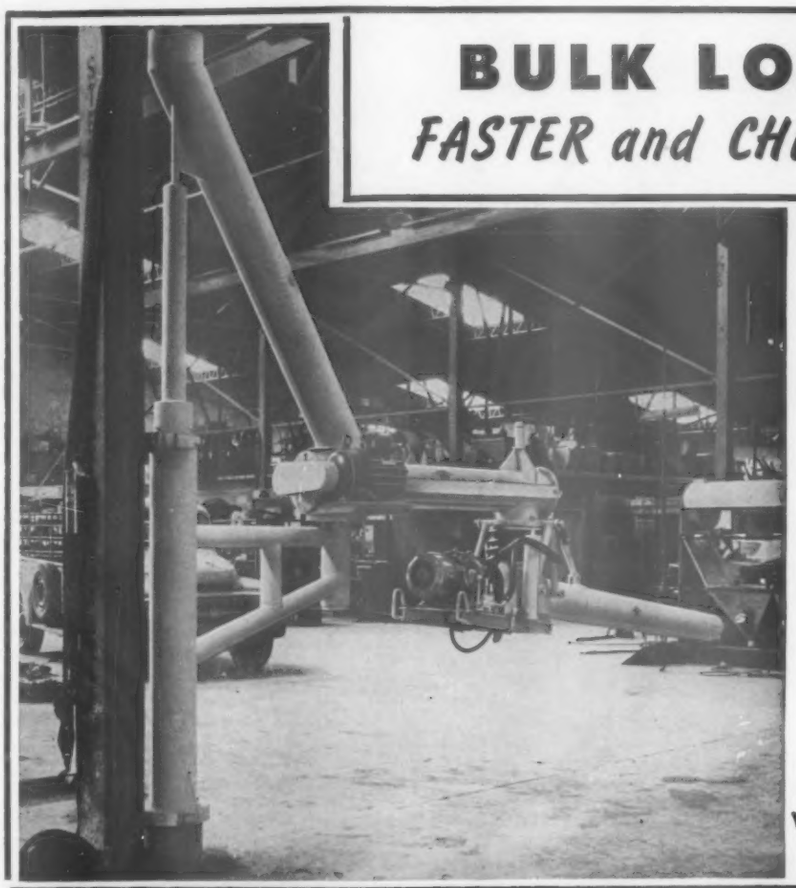

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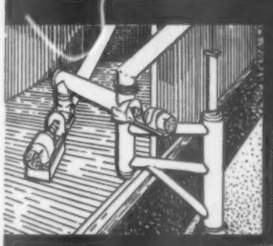

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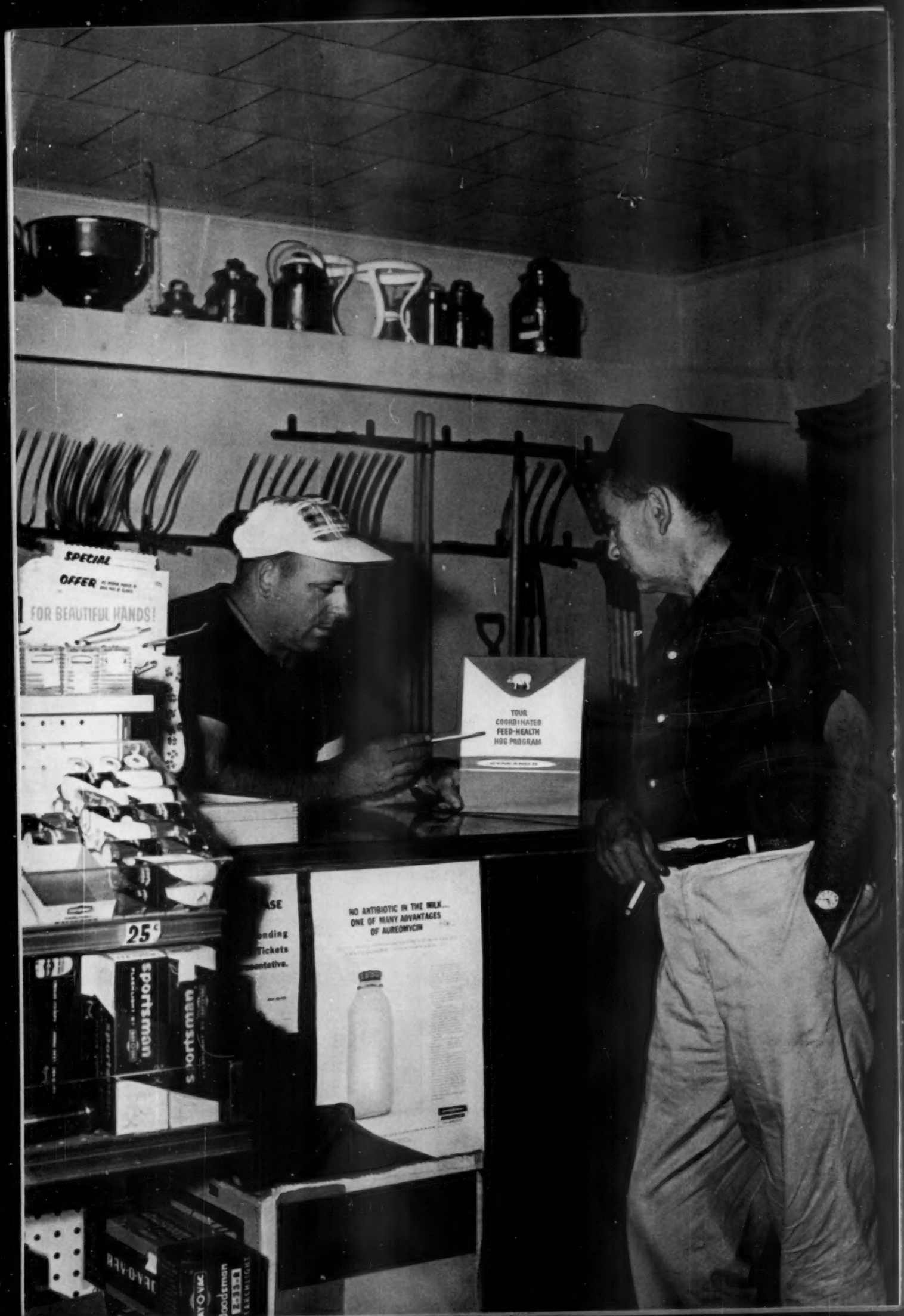
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CYANAMID COORDINATES ITS SERVICES TO THE FEED INDUSTRY

The modern feed industry bases its total operation on service . . . because the day when the feed manufacturer had nothing to sell but a ton of feed is past.

The industry's trend to more and better service represents a broadening of function . . . a dedication to the problem of helping the livestock and poultry producers to achieve a greater degree of production efficiency and economic success.

Through its service function the feed industry provides producers not only with constantly improved and more advanced feeds, but also helps them to better organize their needs . . . plan ahead . . . and *coordinate* their programs.

This is no overnight phenomenon. It is a growing, developing merchandising trend.

The American Cyanamid Company has observed this trend from its beginning and has coincided its own plans and operations to dovetail into this development. Many of its departments, servicing agriculture with fertilizers, pesticides, defoliants, feed additives and veterinary products, were brought together and coordinated into the Agricultural Division.

Cyanamid purchased over 600 acres of land near Princeton, New Jersey, and is now building an agricultural research and new-product testing center with facilities second to none in the world. Thus, the most active and largest livestock and poultry research organization maintained by any company – the discoverers of AUREOMYCIN®, modified live-virus vaccine, coccidiosis control, a safe hog cholera vaccine, blackhead control, mass vaccination (dust) for poultry, sulfonamide therapy for animals (SULMET®)– has been consolidated and integrated.

Program for the Sixties

And now at the beginning of the Sixties, Cyanamid further coordinates its services to the feed industry, and the producers of America, by offering to the feed industry a completely coordinated feed-health program to further improve the efficiency and financial well-being of the nation's producers . . . to give strong, practical support to the industry and to increase feed sales.

And the coordinated feed-health programs, proposed by Cyanamid, do still more because they will join together a coordinated team of experts–the agricultural college and experiment station specialists, the feed manufacturer, the veterinarian and the livestock and poultry producer.

The Coordinated Feed-Health Program delivers the *double punch* – the full-count knockout – to disease, the ancient enemy of the producer. We think you will immediately recognize the potential power of this program in furthering your own plans for increasing your total feed business.

What is the Cyanamid Coordinated Feed-Health Program?

Briefly, the Cyanamid Coordinated Feed-Health Program is a systematic and organized attack on the disease problems that plague producers.

Carefully developed recommendations for the coordinated use of feeds containing AUREOMYCIN, and scheduled use of preventive vaccines and medications, work for top health and profits from start to market . . . and through the entire productive lifetime of livestock or poultry. Farmers who utilize these programs automatically become better feed customers, using more feeds, more effectively.

What are the advantages to the feed manufacturer and dealers?

1. *Awareness by the producer that livestock and poultry health must be planned for . . . that good health and resulting higher income are not accidental:*

The inclination by many livestock and poultry men to gamble– to take a chance on "getting by" healthwise–cuts down income from their operations and reduces their value as feed customers. Anything that moves the producer to improved efficiency and better income is of great value to the feed manufacturer and his dealers.

2. *Better feed performance . . . fewer complaints:* Many producers traditionally tend to blame any problems on the feed. By achieving a higher level of health and production in the herds and flocks of producers, this serious problem is virtually eliminated.

3. *Stronger feed customer loyalty and satisfaction . . . more and easier contract renewals:* The producer who is getting along "just fine" is the feed manufacturer's best advertisement. Producers, well satisfied with results, are reluctant to change feeds . . . remain as regular customers year in, year out.

4. *A new source of sales and profits:* Because the entire Cyanamid Coordinated Feed-Health Program is built around the planned use of both feed and medication, producers will naturally look to their feed dealers as a source of supply for both types of products. Thus, in his line of medications, the feed dealer has a fast-growing line of additional profit items and a ready-made opportunity to increase his feed sales.

5. Producers are more inclined to accept the feed dealer's recommendations. The Coordinated Feed-Health Program naturally works to establish a still stronger relationship between producer and feed dealer–a working partnership that must, in most cases, result in higher, more continuous use of various kinds of feeds.

Consult your Cyanamid representative

Your Cyanamid representative will be glad to give you detailed information, and supply you with promotional literature, on this Coordinated Feed-Health Program. Consult him or write direct to: American Cyanamid Company, Agricultural Division, New York 20, N. Y. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.* ®*SULMET sulfamethazine.*

CYANAMID

COORDINATED FEED-HEALTH PROGRAM

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

Economists Discuss Farm Outlook For the 1960's

WASHINGTON—Agricultural economists got a chance to look into the future and make some predictions of farming trends that might occur during the 1960's at the 38th Annual National Agricultural Outlook conference held in Washington.

J. Carroll Bottum, economist at Purdue University, pointed first at the farm problem: "The problems associated with both people and land not moving out of agricultural production as rapidly as technology has advanced have resulted in the surplus of farm products. This, and other associated factors, are the cause of the farm income problem," he said.

"New knowledge knows no boundaries, industrially or geographically," continued Mr. Bottum, "With this national attitude and goal, and with the knowledge we already have and that which will be coming out of the agricultural laboratories, I believe the two forces of mechanization and increased crop yields will continue to bring about the need for adjustments in agricultural resources during the decade of the sixties.

"During the sixties, I believe we will also have some improvement in the livestock feed conversion ratio other than in poultry. Therefore, as we look ahead, I see the possibility of the following changes in our agricultural resources:

(1) Cultivated land will continue to move out of crop production, perhaps 40 to 80 million acres.

(2) Labor will continue to flow out of farm production into other occupations, perhaps three-fourths or more of the youth born on farms.

(3) Capital needs will increase.

(4) Capital inputs purchased outside of agriculture will increase.

(5) The management level will increase."

To this background, Mr. Bottum said he would like to add four additional assumptions which he believes to be valid:

(1) In the period ahead, we will have reasonably full employment and an active economy except for the normal moderate business recessions.

(2) We will have approximately 2% increase in the demand for farm products to feed and clothe our population in the decade ahead, but we will adopt new technology at a sufficiently rapid rate that land and human resources will need to flow out of agriculture to keep it in adjustment.

(3) Unskilled and untrained labor will find more difficulty in locating employment in the next decade in our highly developed economy than during the past decade.

(4) The family commercial farm will prevail in most areas of the U.S. as the main producing unit purely on the basis of economic competition.

Official Comments On Control of Contract Feeds

LITTLE ROCK, ARK. — Comments on the question of applying feed control to contract feeders as well as other farmers were part of a recent presentation by Henry DeSalvo, head of feed control in Arkansas.

Mr. DeSalvo noted that contract feeds were recently declared exempt from the Arkansas feed law. However, he said, ". . . it seems only logical that such a contract feeder (with profit sharing or conversion provision) should be afforded the benefits of the feed law and regulations in the same manner as other feeders."

The comments by Mr. DeSalvo on the "Objectives of Feed Control" were presented at the Arkansas Formula Feed Conference and reproduced in an Arkansas State Plant Board publication.

Following are the comments on control on feeds used in contract programs:

"Do our laws and regulations need to be changed? Perhaps so. Most of you are aware of the recent Attorney General's opinion wherein contract feeds were declared exempt from the Feed Law. Aside from whether or not the opinion is the correct interpretation, it is significant that it was rendered on the basis of the 'intent' rather than the 'wording' of the law. For example, the law states in part that 'concentrated commercial feeding stuffs shall be held to include all feeds used for livestock and poultry' with certain exceptions. This appears to cover all feeds. In Section 6, the report and inspection fee section, there is specified in general that each and every manufacturer shall report quarterly the tonnage of all concentrated commercial feeding stuffs transported into or manufactured for sale and/or consumption in Arkansas, and that an inspection fee of 10¢ per ton shall accompany the report. This again appears to include all feeds, with the exception of those mixed by a farmer for his own use. Again it must be pointed out that the intent and not the wording was the basis of the opinion. This points up the need for a law that can be interpreted with reasonable accuracy by tne ordinarily informed individual.

"Disregarding the legal interpretation, let us explore whether or not there is a need for feed control on contract feeds. At present there are very few 'strict labor' contractual agreements. Most contracts specify a set rate per bird delivered at the processor with profit sharing clauses and/or conversion rate incentives. The question is: Can the net return to the feeder be affected by the type or quality of feed? It is apparent that it could. For example, disease may become prevalent because of inadequate medication, thus causing mortality and reducing conversion. It seems only logical that such a contract feeder should be afforded the benefits of the feed law and regulations in the same manner as other feeders."

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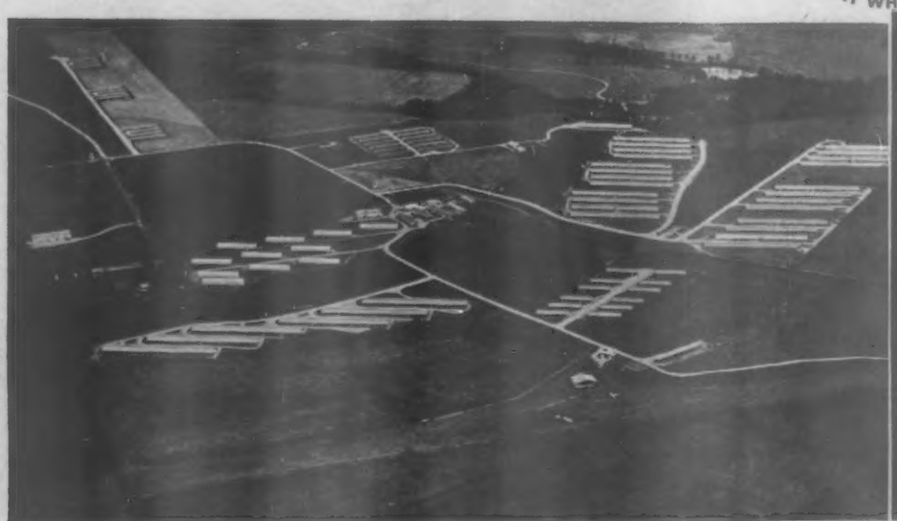

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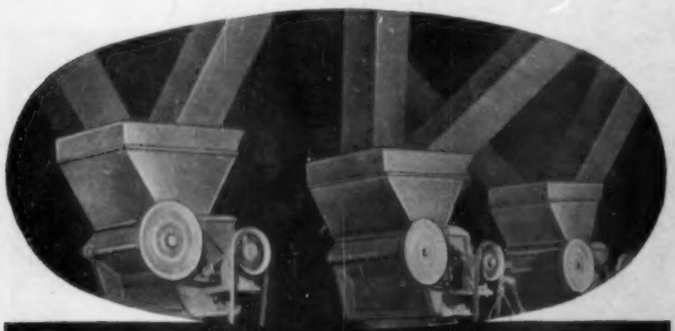

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RELATIVE POSITIONS—This "back-door" view shows the location relationship of the new bulk protein ingredient storage facilities (left) and main feed mill of Simpson & Co. at Colorado Springs, Colo. In circle at the base of the new 100-ft. Butler steel storage bin is the GrainVayor used to pneumatically unload ingredients from truck or car into bin. Ingredients are pneumatically conveyed from the storage tower through piping to cyclone (out of sight) atop the mill. From there they are gravity fed into holding bins over the mixers.

Colorado Firm Installs New Bulk System

By Special Correspondent

Production costs have been reduced since a Colorado feed manufacturing firm started using a new bulk ingredient handling system.

The handling system, which includes a new use of a portable pneumatic conveyor, was installed by Simpson & Co. of Colorado Springs. Before the new method was introduced, cottonseed meal, soybean meal, alfalfa pellets and other protein ingredients were shipped in by truck or rail in bags. After being unloaded by hand, the sacked ingredients were stacked and stored. Manual handling again was required when the ingredients were added to the mixed feeds.

Now, however, company officials note, unloading of the same ingredients is a much simpler chore. Incoming proteins are received in bulk and unloaded into a new 100-ft.-high Butler steel storage bin with a Myers-Sherman GrainVayor, a portable pneumatic conveyor widely used for handling grain. The new storage facility has a capacity of more than 300 tons.

Incoming material for use in the manufacture of Cowpuncher brand feeds is unloaded directly from truck or car with the portable pneumatic conveyor into the new storage unit. One man can handle the entire unloading operation. Before the new system was installed, four men were required. Unloading time has remained the same, but man-hours have been reduced to one fourth the former level.

Removing proteins from the storage bin and conveying them to the main mill building have been simplified, too, officials point out. Connecting pipes are switched, and the GrainVayor moves material to holding bins over the feed mixers in the mill approximately 100 ft. away.

Results in Savings

Alf Owens, partner and general manager of Simpson & Co., says the new system has performed successfully and already has resulted in savings, both for his firm and for its

LOOKING IT OVER—Alf Owens (left), general manager of Simpson & Co., Colorado Springs, Colo., and Robert S. Davis, assistant manager, inspect Myers-Sherman GrainVayor which powers the feed company's new pneumatic ingredient conveying system.

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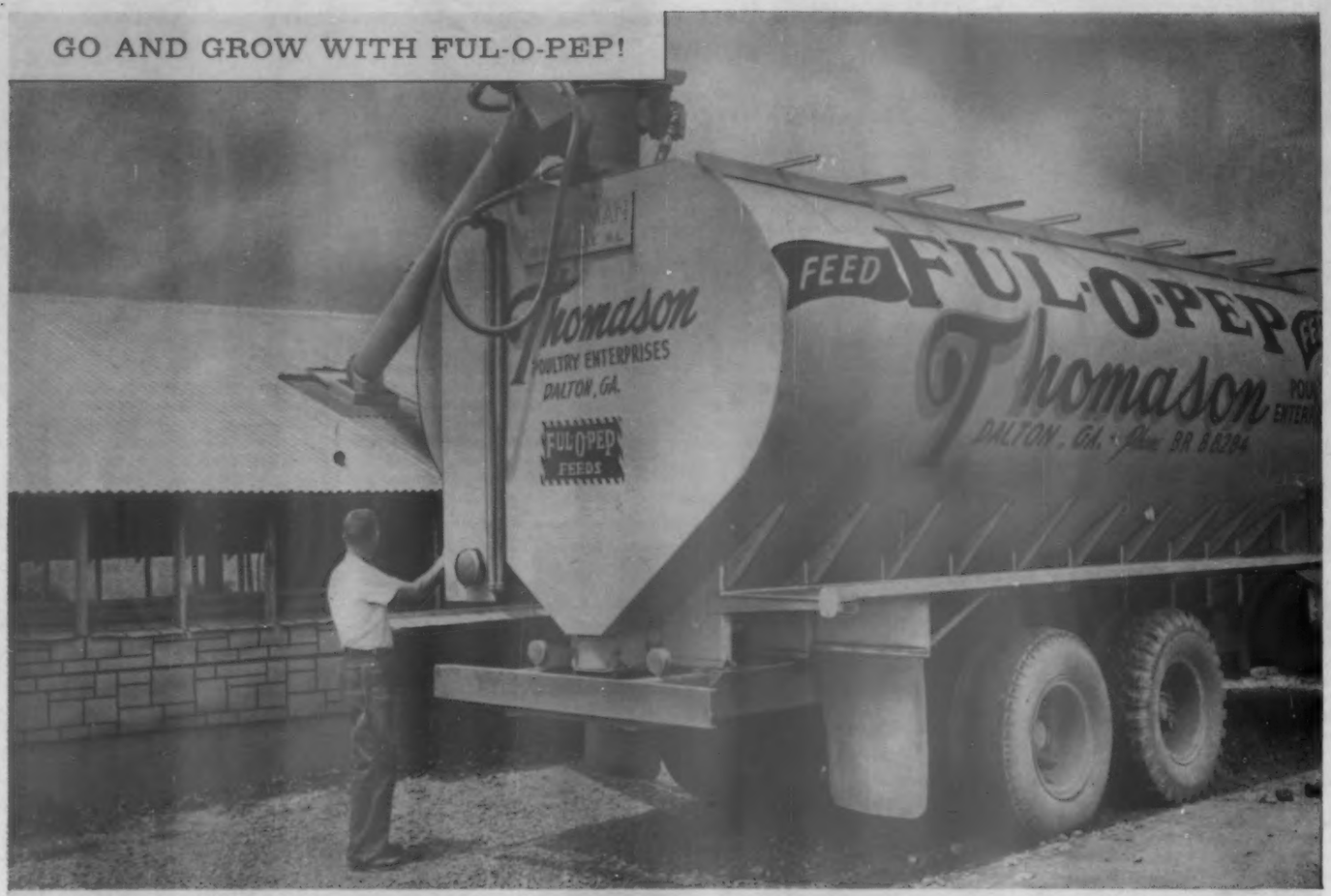

This 14-ton bulk truck unloads Ful-O-Pep feed at a broiler house near Dalton, Ga. "Prompt bulk service by Ful-O-Pep enables us to keep our investment in equipment and inventories at a minimum," says David A. Thomason, of Thomason Poultry Enterprises. "Ful-O-Pep keeps its fingers on the pulse of the feed business," he went on. "As a result, Ful-O-Pep is geared to the new era of feed handling and selling."

"You get specialized service

...attuned to today's more specialized feeding needs"

—says David A. Thomason, Dalton, Ga.

"Whatever your needs, you can depend on Ful-O-Pep for the specialized service so necessary to make your operation more efficient," says David A. Thomason, Thomason Poultry Enterprises, Dalton, Ga.

Mr. Thomason picks up feed in bulk daily at a nearby Ful-O-Pep mill, and delivers it direct to the farm. Fast mill-to-farm delivery helps keep his inventory and equipment costs low. "More and more of today's specialized feeders are turning to bulk handling," Mr. Thomason comments, "and Ful-O-Pep has led the way with bulk for years."

GO AND GROW WITH FUL-O-PEP! *Get story of Ful-O-Pep's 5-Point Bulk and Grind-Mix Program. Write: Feed Sales Division, The Quaker Oats Company, Merchandise Mart, Chicago 54, Illinois.*

Ful-O-Pep quality and service "mean everything to me," says Mr. Thomason, **in helping protect his $300,000 investment in broiler operations. Here, Mr. Thomason is checking some of his birds on contract.**

Test records show Ful-O-Pep gave an extra margin of efficiency over another well known feed, Mr. Thomason said. In 15,000-bird tests, Ful-O-Pep birds averaged 3.34 lbs. with 2.17 conversion – and 3.54 lbs. with 2.18 conversion.

As his business grows, Mr. Thomason looks to Ful-O-Pep as a real "partner in progress." His local Ful-O-Pep representative makes regular service calls. "Ful-O-Pep quality, service and leadership are things you can build on," he says.

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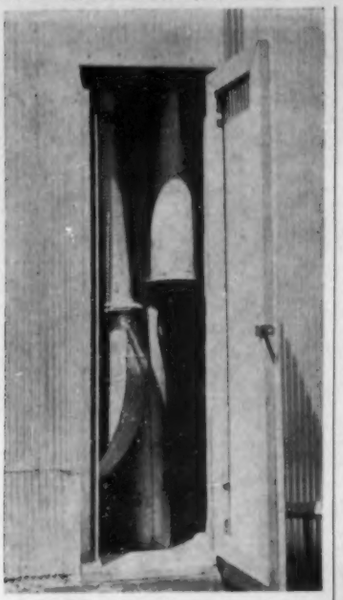

"SWITCH" PIPES — This view through door at base of grain storage tower shows "switch-over" design which connects portable pneumatic conveyor to one set of pneumatic pipes for conveying materials to storage and another set for moving proteins from storage to the feed mill.

farm and ranch customers in southern Colorado.

Mr. Owens said he has other jobs in mind, too, for the portable conveyor. It will be used also for handling grain and in a general housekeeping capacity. Permanent pipes will be installed in the mill to which vacuum cleaning equipment attachments can be connected. Thus, the pneumatic unit can be used to power the entire mill cleaning system.

The GrainVayor was introduced to this feed mill use in Colorado by the Dana Clark Equipment Co., Salina, Kansas.

Co-op Amends By-Laws

REDMOND, ORE.—Patrons of the Deschutes Farmers Cooperative here voted to make effective the payment of taxes on non-member, non-producer business.

Manager Gus Hagglund and Board Chairman Arthur Horsell explained that this procedure will reduce the amount of necessary record-keeping and will have the effect of gradually building up the cooperative's cash position and making revolving reserves more liquid.

Patrons who have earned memberships will retain them, but from now on, earned memberships will be discontinued. New memberships will be bought by farm producers for $5. Producers were defined as "anyone who produces agricultural products of any kind for profit."

The Weigh-Burro bulk scale is self-discharging, rugged, durable. Easy rolling wheels. Scale cap. 1000 lbs. Price only $295. Order by collect wire today.

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Only $295

N. C. Poultrymen Hear Experts Discuss Egg Prices, Marketing

RALEIGH, N.C.—Egg prices, marketing and market quotations were among featured topics discussed at a two-day egg industry conference at North Carolina State College here.

(Also see earlier story on conference in Feedstuffs Nov. 26.)

Dr. C. K. Laurent, general manager of Marbut Milling Co., Augusta, Ga., opened the session with a discussion of North Carolina and the national egg market.

Dr. Laurent covered two aspects of the egg market: (1) North Carolina price structure and its relationship to the national market and (2) factors which influence egg prices in the national market.

He cited the fact that North Carolina farm egg prices are higher than the U.S. average. This is because the Tar Heel state is closer to deficit areas of the East than the midwestern egg producing areas. Also, North Carolina has become a major producer of hatching eggs in recent years and higher prices are paid for these eggs.

Dr. Laurent stated that egg prices received by farmers influence and are influenced by changes in quantity of eggs used, storage of eggs, retail egg prices and production of eggs.

He continued by pointing out some of the factors affecting farm egg production: (1) Size of laying flock and (2) output per layer.

"The two ways farmers control the size of the laying flock," he stated, "are by varying the number of pullets raised and by keeping or selling those hens they do have. The decision to start pullets or to keep old hens is affected by such factors as (1) farm price of eggs—January-June, (2) poultry feed prices January-June, (3) annual farm price of eggs, and (4) annual poultry feed prices.

"Egg prices received by farmers," he stated, "are influenced by, but do not significantly influence, changes in population; retail prices of meat, poultry, fish, and cereals; general price level; consumer income; marketing costs, and prices of poultry feed."

Discussing egg consumption, Dr. Laurent reported that consumption per person has been declining since 1951, falling from around 390 eggs per person to an esimated 325 for 1960.

He added that the health factor appears to be an important feature of the consumption picture.

Egg Prices

The conference also featured a panel discussion on egg prices. Participants were C. A. Middleton, supervisor of market news, Virginia department of agriculture, Richmond, Va.; William Groff, head egg buyer, American Stores, Philadelphia, Pa.,

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HOW SHOULD YOU EVALUATE THE COST OF A GROWTH STIMULANT: BY INITIAL COST, OR BY RESULTS?

When a growth stimulant increases weight in *marketable* birds so that the improvement is worth many times the initial cost of the growth stimulant, it's obviously a good investment. And when that same growth stimulant additionally produces a significant increase in feed conversion efficiency, then it's an even better investment! GALLIMYCIN-10 is just such a growth stimulant!

Increases profits in 3 ways

The low-level effectiveness of GALLIMYCIN-10 ... greater marketable weight produced ... plus savings in feed ... all add up to bigger profits. Increased profits from feeds supplemented with GALLIMYCIN-10 have ranged from $29 to $46 per 1,000 birds ... added profits *above* feed and feed additive costs!

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and Gordon Urner, vice president, Urner-Barry Co., New York, N.Y.

"One of the main guideposts in any successful market news program," he explained, "has to be objectiveness."

Another measure of a successful market news system, he added, is one that keeps up-to-date on marketing practices. He stated that the egg industry and the department of agriculture in Virginia up-dated their egg reporting by discarding the four state terminal market reports and originating one state-wide daily egg market report.

"Right now," he suggested, "I believe with the proper support of the industry, Virginia, North Carolina, and Georgia could combine their efforts and realize a daily southeastern U.S. egg report. And, I am not limiting this effort to these three states, for I feel sure that there are others who would be interested in it, primarily Florida, Alabama and Mississippi."

Mr. Groff began his talk with criticisms about egg price quotations.

"I believe that the market news service agency should refer to eggs solely on the merit of the internal and external qualities of the eggs without any description or phraseology which might influence the buyer."

He stated that Urner-Barry Market News Service should be sensitized only by supply and demand factors, ignoring price props. He urged recognition of treated egg shells since these eggs, in many cases, are the finest quality.

Commenting on the changing industry exchange, Mr. Groff reported that as more and more producers negotiate contracts directly with chain stores or other retail outlets, Urner-Barry must reach out further daily for an intelligent appraisal of the real and true market conditions.

Mr. Groff stated, "All buyers today should be, and probably are, interested in the integrity of their dealers as well as their product. Here, in North Carolina, you have a golden opportunity to become an even larger factor in supplying fine quality eggs in the northeastern U.S., and I believe that you should profit by the errors of other egg producing areas. Have an outlet for your produce before you over-expand your operation. Retain and guard your prestige and reputation of your product, and they will secure your market outlets during periods of over-production."

Economic Theory

Mr. Urner opened his talk by saying that the prices of eggs are determined to a greater degree by willingness to buy than by willingness to sell.

Important commercial-scale outlets are limited to but four channels, he continued: (1) domestic consumption in private homes, in public eating places, in institutions, and in other mass feeding operations, (2) breakers converting to liquid, frozen or dried forms, (3) exporters, and (4) refrigerated warehouses for short or long holding.

"It is," he explained, "the effective total demand emanating from buyers supplying these four channels, balanced with and against the total available supply, which creates a varying reflection in terms of price of each grade, size and type of shell eggs."

He stated that the egg and poultry industry opinion clearly favors maintaining its free enterprise status in a free economy, unbound by governmental controls, and spared from governmental participation in or dictation of the pricing of its products.

He reported egg prices at New York City exert a dominant influence over an extremely broad area, due to this commanding stature in the merchandising scene. The New York Mercantile Exchange plays a tremendously effective part in open market trading operations. Its daily spot shell egg call is conducted under rules and specifications painstakingly set up and rigidly supervised by experienced officials and committees, and is subjected to close observation by representatives of the USDA's Commodity Exchange Authority.

He reported that, except in isolated instances, mostly of relatively short duration, egg supply and demand conditions in the New York City market area are very closely representative of such conditions in other commercially-important country sections east of the Mississippi and often west.

24-HOUR SERVICE

One New England feed dealer, who spends his waking hours providing customers with the latest in service, was awakened by the phone ringing at 2 a.m. It was a customer who wanted to place his grain order. "Did I wake you up?" asked the early bird.

"No . . . I was out mowing my lawn," the feed dealer replied, as he got pencil and pad together to jot down the customer's order.

GRAIN DEALER KILLED

PASO ROBLES, CAL.—Ray Pelton, Jr., Paso Robles grain dealer, was killed in an automobile accident here. He was 33. Mr. Pelton took over the grain firm from his late father four years ago. He had been a member of the California Hay, Grain and Feed Dealers Assn.

GALLIMYCIN has been proven better

In scientific studies at agricultural colleges and experiment stations, and in tests conducted at Abbott's Research Farm, GALLIMYCIN, used at a level of 5 grams per ton of feed, consistently produced better results.

Growth improvement in flocks fed GALLIMYCIN, based on an average of field trial results, was 5.8%. Yet, it takes *less than 1% improvement in growth to pay for GALLIMYCIN at the recommended level!* GALLIMYCIN-10 increased feed efficiency at the same time, producing greater net gains per pound of feed. In one trial, feed efficiency was 7.4% higher in the flock receiving GALLIMYCIN than in the control flock receiving no growth stimulant.

A 9-week floor pen test at the University of Arkansas, in which GALLIMYCIN was added to feed at a level of 5 grams per ton, produced these results: 190 lb. extra weight per 1,000 birds on 51.4 lb. less feed! These are impressive figures just as they stand, yet the dollar equivalent is even more impressive. Using a broiler market price of 18¢ and a feed cost of 4¢ per pound (exclusive of antibiotic cost), GALLIMYCIN produced $35.45 *extra profit* per 1,000 birds!

In another trial involving 5,300 birds, the average weight of GALLIMYCIN-fed birds at 9 weeks-six days of age was 4.12 lb. Feed conversion in the same test was 2.23.

GALLIMYCIN has been compared with the "older" antibiotics in numerous field trials and has consistently produced better growth responses from less feed. In Utah, the effect of GALLIMYCIN on growth promotion was studied in comparison with five other antibiotics. In these studies, GALLIMYCIN produced greater average weight and better feed conversion efficiency than any of the other antibiotics tested.

GALLIMYCIN-10 has been field tested in every major broiler area in the country. It is effective as a low-level growth stimulant (under practical growing conditions)... stimulating growth at a higher rate of feed efficiency. GALLIMYCIN-10 can be fed continuously, right up to the day of marketing; no withdrawal period is necessary. It's supplied in a free-flowing premix with a soy bean oil meal carrier, manufactured under rigid standards of Abbott quality control. And, GALLIMYCIN-10 carries a 24-month expiration date! GALLIMYCIN-10 is safe... proven; there are no special registration requirements.

It's not what it costs but what it pays that counts!

The higher initial cost of GALLIMYCIN becomes minor when measured against increased weight in marketable birds, plus savings in feed ...for the true cost of an antibiotic feed supplement depends on the results it produces.

Yes, you'll make more dollars with GALLIMYCIN-10 in your broiler feeds. Ask your Abbott man for complete details on what GALLIMYCIN feeding programs can pay you!

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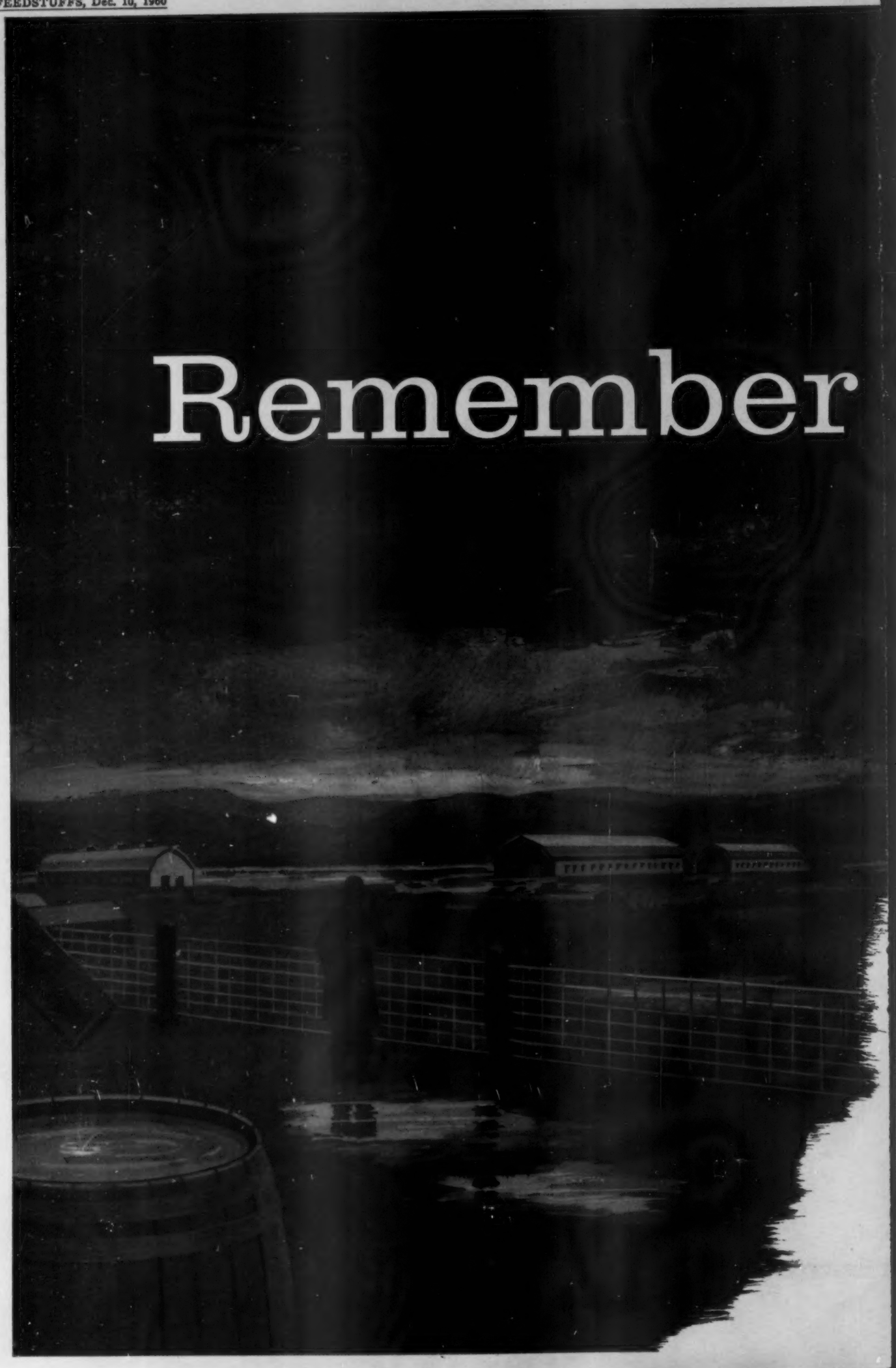
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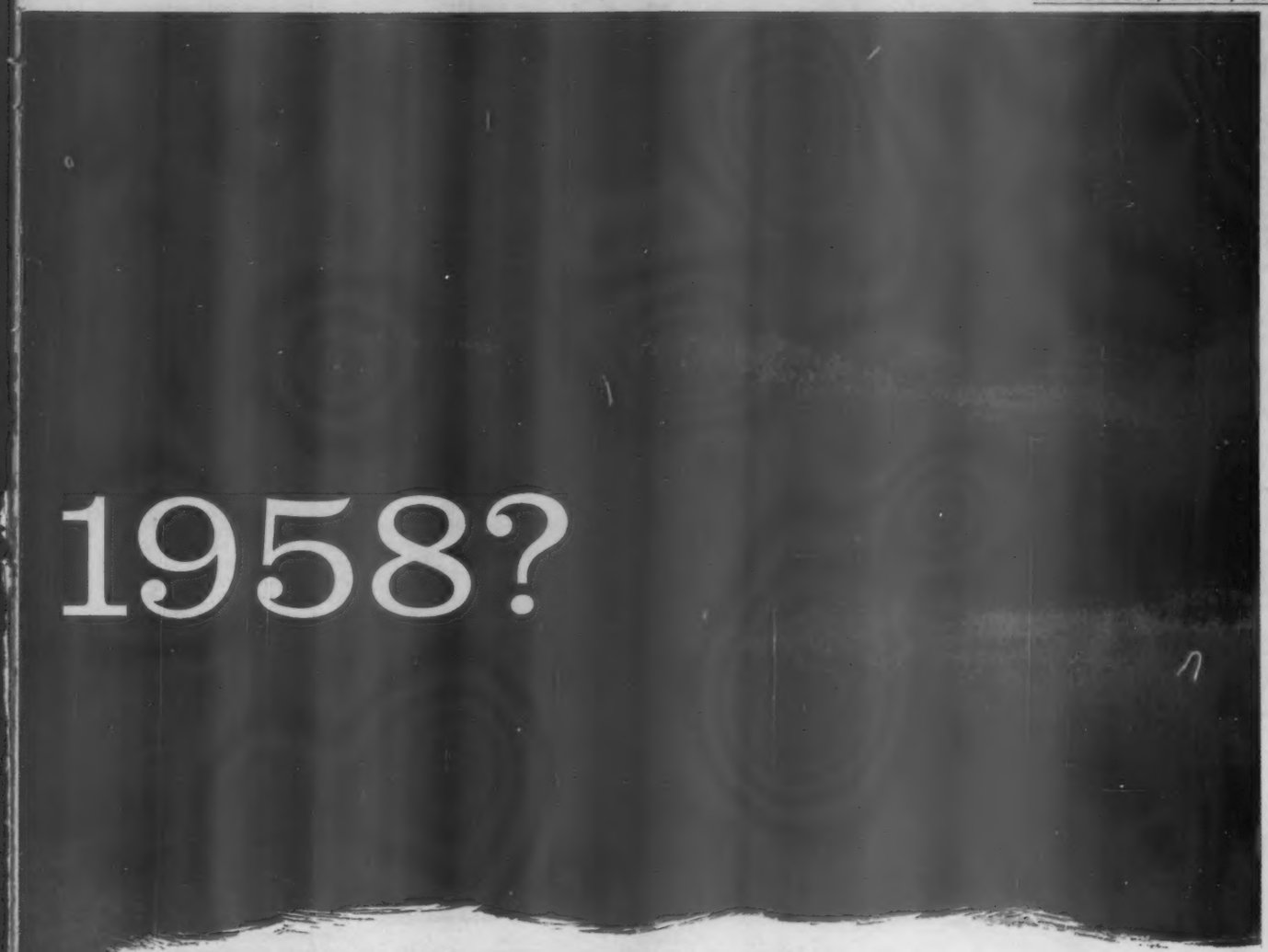

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Unistat® prevents coccidiosis best, also gives your feeds other profit-making benefits

1958 was the year Dr. Salsbury's Unistat was first given widespread trial by growers. It was also a year marked by bad weather which triggered disastrous coccidiosis outbreaks across the country. This gave Unistat a chance to prove its worth under bad field conditions right alongside other coccidiostats. *Unistat-protected flocks came through almost unscathed,* although nearby flocks suffered serious loss. Since then, Unistat has grown steadily in popularity until today it is fed to over a billion broilers a year.

Yes, it *can* happen again—unless your feeds contain Unistat. Unistat prevents coccidiosis best because of its unique combination of drugs. They work together as a team providing far more protection than any single drug, chemical complex, or compound.

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Because of sustained advertising and promotion, your customers know of Unistat's many advantages. That's why it is today's No. 1 coccidiostat. Make sure your feeds provide the many benefits only Unistat can offer. Write, phone, or wire for Feed Manufacturer's Guide. Or, ask for a Dr. Salsbury's representative to call personally and talk with you about Unistat, *the feed additive that prevents coccidiosis best!*

Dr. SALSBURY'S LABORATORIES
Charles City Iowa

NATIONWIDE SERVICE TO THE FEED INDUSTRY

Nominations Open For Research Award

DES MOINES — Nominations for the fifth annual Distinguished Service Research Award were called for by the Animal Health Institute, sponsor of the award. The award is made for achievement in the field of scientific research in animal health and nutrition.

A brochure stating formal qualifications for nominees has been mailed to the nation's agricultural colleges, scientific and industrial organizations and others professionally interested in animal health and nutrition.

Any individual, however, may make a nomination and copies of the brochure may be obtained from the Animal Health Institute, 512 Shops Building, Des Moines, Iowa. The award will be presented during the institute's annual meeting at the Mayflower Hotel in Washington, D.C., April 24-26. Nominations will close Feb. 15.

Purpose of the award is to "publicly proclaim American agriculture's debt of gratitude to scientists in the field of animal health and nutrition, and to personally honor an outstanding member of this scientific body who has rendered the American livestock and poultry industry particularly distinguished service in this field of endeavor culminating within the current five-year period." The award is symbolized by an engraved plaque, and includes $1,000 in cash.

The Animal Health Institute is comprised of manufacturers of antibiotics, biologics, chemicals, drugs, feed additives and other related products important to animal health and growth, and to the maintenance of an adequate supply of safe, nutritious livestock and poultry products for the American consuming public.

Maple Leaf Milling Profit Off Slightly

TORONTO — Slightly lower net profit for the year was reported to stockholders of Maple Leaf Milling Co., Ltd., at the recent annual meeting. The large Canadian flour and feed milling company reported a net profit of $1,200,502 for the year ending July 31 as compared with $1,281,488 for 1959, a record year.

It was also reported to stockholders that the firm expects to recover $6 million through insurance on buildings and equipment destroyed in a fire Oct. 7 at Port Colborne. That fire destroyed the largest flour mill in the British Commonwealth, a feed mill, a bag factory and a warehouse, all owned by Maple Leaf. There will also be additional reimbursement for inventories and loss of profits, according to the management.

The report to stockholders states that formula feed sales of the firm were down moderately from the previous year. The report indicated that many products of Canadian farms came into overproduction in 1958-59. "This was brought about by the growing trend to specialization in growing and marketing, together with government support programs in effect at that time. As a result there was a drop in prices to support levels. During fiscal year 1959-60 the federal government amended its support program by a deficiency payment method, thus throwing on the open market surplus production of these farm products. There was a further decline in prices as a consequence. The lower prices for pork, eggs and poultry meats influenced a drop in production and a reduction in the demand for feedstuffs.

"Toward the close of the year prices of these several agricultural products were showing a firmer trend and there was evidence of revived interest in feeding programs. Because of the rapidly increasing population in Canada and the increasing per capita consumption of red meats, poultry meats and eggs, the broad outlook is for a constant increase in the production of these products of the farm. However, the so-called constant increase is subject to temporary setbacks from time to time, following periods of overproduction, until production is brought into balance with consumption. It is anticipated that during the coming year our sales of animal and poultry feeds will resume their trend upwards."

The firm reports that its new bulk and bag feed facility at Ste. Foy will be completed early in 1961. It was also announced that sale of the Henri-Julien feed plant in Montreal has been negotiated and production tonnage transferred to the Montreal Bridge Street plant, which the firm terms a more economically operated plant.

MICROSCOPY MANUAL

The new, revised Manual on the Microscopic Analysis of Feeding Stuffs is receiving wide distribution throughout U.S. and foreign countries, reports G. M. Barnhart, secretary-treasurer of the American Association of Feed Microscopists. Mr. Barnhart says the manual is helpful to the beginner and advanced microscopist in this field, which is becoming more and more important in formulation and control of feeds. Copies may be secured from G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

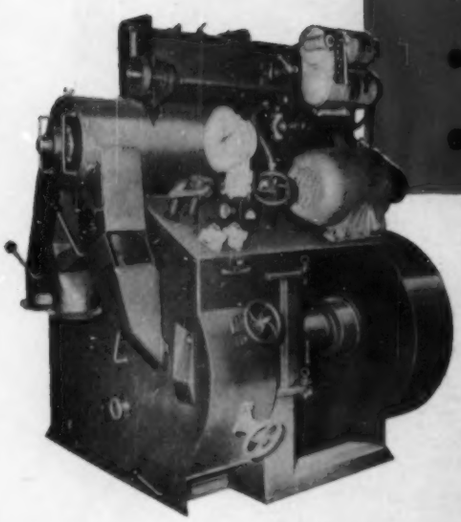
FEED LEADER NAMED

OKLAHOMA CITY, OKLA.—B. D. Eddie, president of Superior Feed Mills, has been nominated to the YMCA metropolitan board of directors as a proposed member-at-large.

Wenger Multi-Duty PELLET MILLS

One Unit Producing All 3 Major Types of Feed

- HARD PELLETS WITH OR WITHOUT LIQUIDS
- WENGERBLENDED MASH FEEDS ONE OR TWO LIQUIDS
- HI-MOLASSES PELLETS OPTIONAL (30% to 50% Molasses)



Owners believe that the Multi-Duty is unequaled in its rugged construction, its top hard pelleting capacities, and its versatility. No other pelleting equipment has brought such great opportunities for meeting all the needs of feed manufacturers—at a cost within the reach of most. The Multi-Duty is more than a producer of feeds—it's a creator of opportunities.

Phil Wake, J. H. Wake Feed Mill, Oskaloosa, Iowa, has a fine new feed mill built around a Multi-Duty. Mr. Wake comments:

"We have used The Multi-Duty Pellet Mill for over a year for the production of complete swine and poultry rations, plus the manufacture of a high molasses pellet, which we were unable to make previous to this installation.

"The simplicity and ease of operation has been remarkable. The capacity also is greater than anticipated while maintenance is a very minimum".

Complete Swine and Poultry Feeds & Molasses Pellets.

Gordon McKinney, General Manager, Honeggers & Co., Inc., Lincoln, Nebraska has this to say about their Multi-Duty:

"Honeggers' operate Wenger Multi-Duty Pellet Mills in plants at Lincoln, Fairbury, and Indianola. In our Lincoln plant, the 125 HP Multi-Duty equipped with three liquid conditioning feeders (molasses, fish solubles and fats) produces top quality range cubes, hard pellets and crumbles, as well as high molasses pellets with molasses content as high as 40%. We are also able to produce fine quality feeds in meal form with high liquid feed content".

Complete Line of Formula Feeds.

Mr. Louis Ebel of the Ebel Alfalfa Company in Scribner, Nebraska, is one of the leading alfalfa processors in the Midwest. About his Multi-Duty, Mr. Ebel has this to say:

"We are most pleased with the performance of our Multi-Duty Pellet Mill and Horizontal Pellet Cooler which are producing fine quality dehydrated alfalfa meal pellets at good capacity rates. We have also developed a nice off-season business on suncured alfalfa pellets with molasses."

Dehydrated Alfalfa Meal Pellets — Suncured Alfalfa Pellets.

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SABETHA, KANSAS · PHONE AVenue 4-2133
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d- When nature makes vitamin E, she gives to each molecule a "right-handed" twist. A less effective form, known as "*dl*," consists of both "right-hand" and "left-hand" molecules in equal numbers. The vitamin E in *Myvamix*, like the vitamin E in nature, is all "right-handed"—all *d-*. It's 36% more potent than the man-made variety.

alpha- At least seven plant substances—tocopherols—have vitamin E activity. Far and away the most effective member of the tocopherol family, biologically speaking, is "alpha." To equate tocopherol with vitamin E is misleading. Corn, for example, is rich in tocopherol. But nearly 90% of its tocopherol is in non-"alpha" forms of weak vitamin E effect. "Alpha," the biologically effective tocopherol, is what you get in *Myvamix Vitamin E*.

tocopheryl acetate The "acetate" means that the vitamin E in *Myvamix* is really stable. Tests show no loss of potency even after storage in finished feeds for six months at 100° F. The full potency you put in the feed is there when the feed is fed.

soy grits The vitamin E in *Myvamix* is on a dry, non-dusting soy grits base. We use grits instead of meal because they have less fiber, less moisture, more protein, more uniform particle size, and are dusted to remove hulls and powder. All this means a higher quality product, one that's as easy to handle as anything in your mill.

DPI This is the place to come for information or a quotation on *Myvamix Vitamin E*. Write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto • Or call the distributor nearest you.

Discusses Effects of Farm Policy, Grain Problems on Trade

MANHATTAN, KANSAS—"Probably the most important matter related to farm policy which the grain trade may face in the 1960's is the reduction of Commodity Credit Corp. stocks and a constant overhaul of public storage policies, rules and rates," Dr. John A. Schnittker, Kansas State University specialist, told persons attending a Kansas State extension school for top management of grain and feed marketing firms.

Dr. Schnittker, who heads a committee named by President-Elect John F. Kennedy to develop a wheat program, also commented that a coherent policy toward food reserves is needed. He said that minimum security reserve food stocks should be defined by military, civil defense, health and food officials.

He said, "I suspect they ought to be smaller than they are today, and that to be really useful in a civil emergency, the food stocks should be partly converted from grain to flour and animal products, not left in terminals or country elevators.

"Once a food reserve policy is stated and accepted, we can begin the task of working off excess grain stocks with a clear conscience and a plan, not with a guilty feeling of not using our food abundance constructively."

He commented that all responsible parties interested in farm policy have been convinced of the probable need to reduce grain stocks for several years. He said that if we insist on farm product prices in 1965 at least as high as in 1960, yet require that additions to grain stocks be ended, we probably must cut wheat marketings by 12-15% by 1965 and feed grain output by 10% from the 1958-60 levels. Production cuts might have to be greater if special outlets are not found for present stocks, he stated.

Marketing Quotas

The Kansas State economist said, "Substantially higher farm prices would require even larger production cuts and would be difficult to achieve. Bushel marketing quotas are being discussed for wheat. They have been condemned as impossible to administer, requiring thousands of bureaucrats, etc. One should not take this too seriously. Bushel quotas need not be a serious burden on farmers or the grain trade. There is no discussion of requiring maintenance of identity of wheat bought under the marketing quota. The existence of a feed wheat price along with the primary use price should not present insurmountable difficulties.

"The bushel quota program proposed for wheat in 1960 would have cut CCC wheat stocks about 100 million bushels a year. Land retirement programs with considerable support in the Corn Belt might cut corn stocks by twice that much each year. Five years from now, even in the absence of the 'coherent federal food reserve policy,' grain firms and farmers might have 1.5 billion bushels less grain in storage than in 1960.

"This is a goal fervently but silently wished for by taxpayers. Some tell me that the grain trade would absorb such a decline in its volume of storage without difficulty, as obsolete storage is abandoned, merchandising activities expanded, etc. I hope that is the case."

Grain Demand

Dr. Schnittker says in regard to demand for grain that the 1965-70 meat diet is already in our grasp in the present grain supply. He says we could hold production to 150-155 million tons until 1965 and then expand production to near 170 million tons by 1970 and continue to upgrade the milk and meat diet of the country.

He says that demand for wheat is limited to a slow growth with the population, but he cites export demand for both feed grains and wheat as European diets improve rapidly. This, however, depends on world conditions. He reports that expanded wheat exports appear almost sure for the next five years but that long run exports depend on failure of Asian countries to meet food deficits which would throw economic development plans off.

Nutrition Director Appointment Told

BIRDSBORO, PA. — Appointment of Franklyn S. Harris, Columbus, Ohio, as director of nutrition at F. M. Brown's Sons, Inc., has been announced.

F. S. Harris

He holds a B.S. degree in animal and poultry husbandry from the University of Massachusetts. He has done graduate work at the University of Tennessee where he served for a year and a half on the staff doing research in animal and poultry nutrition.

Mr. Harris has seven years' commercial feed manufacturing experience. He has spent considerable time in nutritional research, laboratory control and field service work.

He will devote full time to duties of feed formulation and product control in his new position. He will also be responsible for development and expansion of new feeds and feeding programs.

F. M. Brown's Sons distributes livestock feeds in Berks, Lancaster, Lebanon, Lehigh, Montgomery and Chester Counties from its mills and feed outlets in Birdsboro, Fleetwood, Reading and Sinking Spring, Pa.

Kray-9 dog food supplement gives you the 3 N's you need to outnose competitive dog foods.

One N is Nutrition. One N is Nose appeal. And one N is Net profits, namely yours. Nutritionwise, Kray-9 supplies 6 vitamins, 6 minerals, and proteins galore.

But, frankly, the thing that makes dogs "demand" your dog food (and thus build your Net profits) is the Nose appeal from the fine Kraft cheese rind in Kray-9.

Ask your Kraft Man for Kray-9—in handy dry form for easy mixing with your other ingredients—to give you the best dog food possible.

KRAY-9 milk by-product dog food supplement by KRAFT

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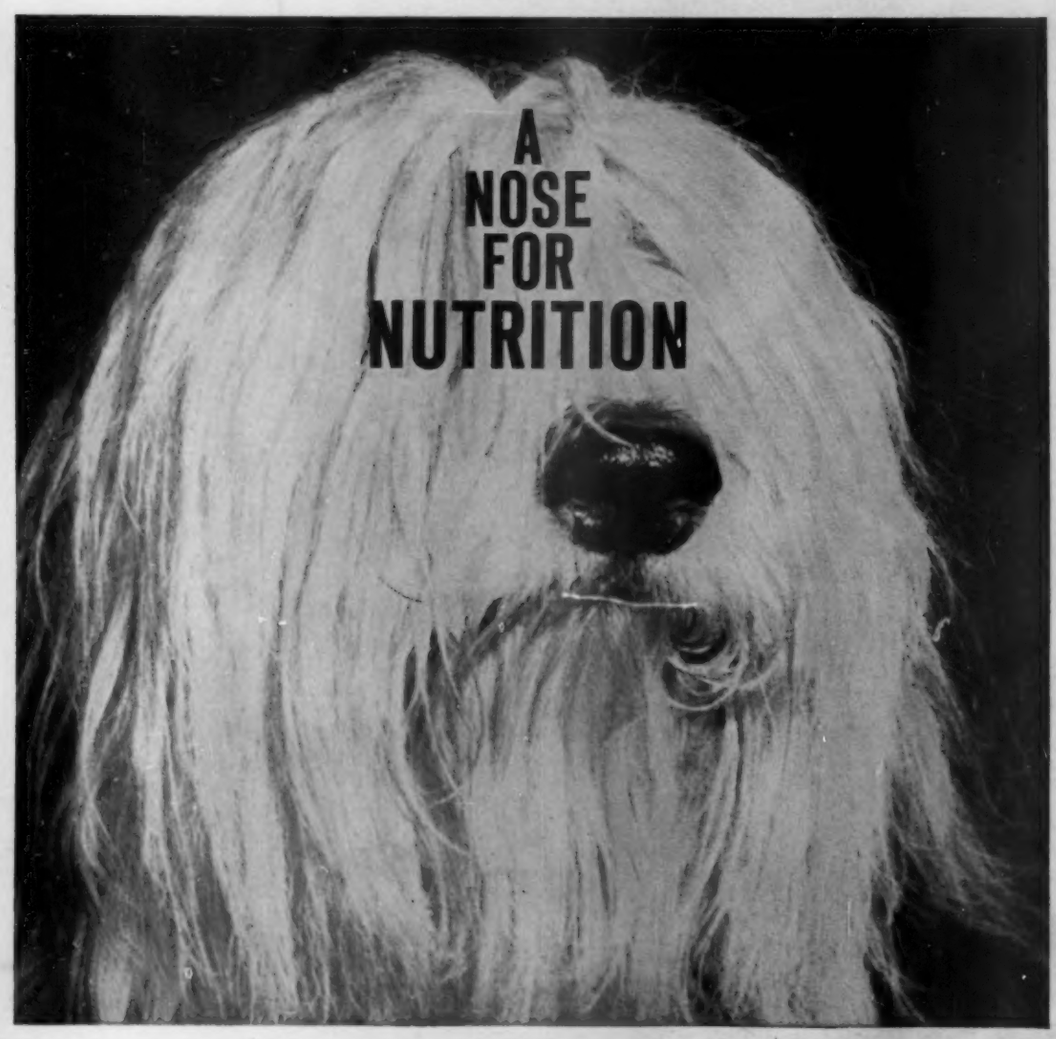

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Owner's viewpoint

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GRAIN DRYERS

"After we began drying grain with ARID-AIRE, both the state and county ASC offices have never refused to accept our dried corn for sealing, and they also have taken all of our dried grain sorghum."

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A Timely Suggestion for the Feed Manufacturer:

Be Prepared for FDA Inspections

"Compliance with Food and Drug Administration regulations may be somewhat difficult, but it is not expected to be as unreasonable as many seem to fear. Procedures required in the mill are essentially those of good business operation."

By Dr. H. S. Wilgus
The Ray Ewing Co.

Every feed manufacturer, whether mixing feed for his own use or for sale and whether selling only within state lines or across them, can expect a courteous visitor to present his credentials as a representative of the Federal Food and Drug Administration.

This gentleman's mission is to ascertain that all requirements for proper receiving, storage, weighing and mixing of drug substances are being met and that the feeds containing these drug substances are properly labeled to assure that the feeder is fully informed on their correct usage. Adequate records must substantiate compliance with these requirements. Procedures should be such that identity of each drug is maintained from receipt into the finished feed.

Publicity has been given to some of the points which this representative will check in the mill. But there is apparently much apprehension as to what to expect and what to do to be prepared. This article is intended to indicate to the feed manufacturer and mixer how to assure himself reasonable peace of mind in anticipating this visitation. The writer is not an authority on the subject. His suggestions cannot be interpreted to reflect any official views or interpretations. They are based largely on numerous conversations with individuals with experience and good judgment in this somewhat smoggy realm.

REGULATIONS APPLY TO ALL—Many feed manufacturers have not taken the Food and Drug Administration's regulations too seriously in the past. The passage of the Food Additives Amendment in 1958 and the mounting crescendo of publicity on subsequent regulations have caused increasing attention to FDA regulations and statements. However, there are yet some manufacturers of feed, particularly those mixing feed for local or "home" use, who believe that they do not need to comply.

It is increasingly apparent that the FDA interpretation is that any feed containing a food additive which has crossed a state line is in interstate commerce, hence is subject to FDA regulations. This would mean that practically all feeds made today, even in local intrastate mills or by a grower-feeder for his own use, or custom-mixed, are subject to compliance. Legal authorities of some large firms disagree with this interpretation of intrastate. If one prefers to follow this dissident opinion, he should be prepared to defend it in court. It is suggested that comparison of time and expense involved in compliance be made with that of a possible legal entanglement.

Each company or person mixing a new drug substance into a feed or into any intermediate mixes is required to possess an effective supplemental New Drug Application or Form 10, regardless of whether in intrastate trade, custom-mixing or farm mixing. The user of a purchased premix or concentrate or supplement or balancer must have an effective supplemental NDA or Form 10 based on the effective supplemental NDA or Form 10 of the manufacturer thereof, showing that the final concentration of the drug substance in the finished feed to be fed is at the correct level. Apparently, free-choice feeding or hand-feeding of a medicated supplement or balancer with grain or roughage will not be permitted in general.

DEFINITIONS—A **"new drug"** is a substance intended for use in disease or parasite control or for modifying physiological functioning for which the safety, because of short time in use, has not been completely established. Before feeds containing new drugs can be marketed, there must be on file with the FDA an effective supplemental New Drug Application for the particular feed manufactured in each mill.

A "new drug" may become "not a new drug" when so classified by the FDA on the basis of satisfactory experience in use. A NDA or Form 10 is not prerequisite to its use. However, if new claims are made for it, a NDA or Form 10 may be required.

Certain antibiotics are designated as "certifiable." These include penicillin, streptomycin, chlortetracycline, chloramphenicol and bacitracin, and their derivatives, such as zinc and manganese bacitracins, dihydrostreptomycin and tetracycline. When subject to certification, the antibiotic manufacturer must provide data to show not only safety but therapeutic efficacy for the claims made in the labelling.

When a certifiable antibiotic is to be used in conjunction with a "new drug," an Antibiotic Form 10 must be filed with the FDA before the combination can be used in feed. It constitutes a request for exemption from certification for use of the antibiotic in animal feeds containing the new drug. It is not necessary to submit a supplemental NDA when filing a Form 10.

Any drug substance, new or old, and any other substance, which in layman's terms is not a normal or "natural" feedstuff, intended for use in feeds is subject to the Food Additives Amendment with a few exceptions. The law exempts certain materials for specific uses, such as pesticides and those under the Federal Meat Inspection Act and the Federal Poultry Products Inspection Act. A food additive is any substance which becomes a component of food directly or indirectly, or which affects the characteristics of any food, and which is not generally recognized as safe (GRAS). Any new substance newly proposed for feed use must be cleared as a food additive or as GRAS before use. Practically every such substance in commercial uses before the amendment became effective (Jan. 1, 1958) must be cleared by the FDA as a food additive or as GRAS before March 6, 1961. The deadline for application to FDA for such clearance or definition was March 6, 1960.

This means that: (1) Any new drug substance or possible new feed additive must be cleared by FDA as a food additive, or as GRAS, and (2) any old or new drug substance or food additive type of substance now in use, even under an effective supplemental NDA or Form 10, must be cleared by the FDA under a food additive order or by FDA as GRAS.

CLEARANCES LIMITED — The list of new substances that have been cleared as food additives to November, 1960, is very limited. In every case, permitted levels and places of usage, permissible claims and cautions, and tolerances for residues in edible tissues are specified. Examples of such products used in feeds include ethoxyquin (antioxidant), manganese bacitracin and oleandomycin (antibiotics), reserpine (antistress agent), zoalene and amprolium (coccidiostats).

The list of drug substances in commercial use in feeds before Jan. 1, 1958, including the common "new drugs" and "old drugs" that have been cleared as food additives, is exceedingly limited, to say the least. It appears that we may expect some of the well-known drug substances to fail to qualify and hence to be

Here's a Suggested Compliance Check List for the Feed Mill

EDITOR'S NOTE: *Specifically, what should the feed manufacturer or mixer do to make sure he'll be in compliance when a representative of the Food and Drug Administration calls to determine whether his plant or plants are being operated in accordance with government regulations?*

That's a hard question to answer, but Dr. Wilgus, author of the article above, has compiled a list of points to check which should be of help to anyone seeking good compliance. His check-list, presented here, is not an "official" one, but it is considered realistic and factual.

If you can answer yes to most of his questions, you'll be able to receive the FDA inspector with confidence.

v v

√ 1. What drug substances and other possible food additives are you now using? List them. Which of these are "old drugs," not requiring a New Drug Application? Do you have an effective New Drug Application or an effective Antibiotic Form 10 for each drug substance requiring one? (In case of doubt, consult references at the end of the accompanying article.)

√ 2. Are you following faithfully the procedures set forth in your NDA's and Form 10's? Read them carefully **now.** Have you filed an amendment to each one when you made any significant changes in equipment, procedures, formulas, etc.? (Current forms provide for considerable range of use of common feed ingredients, both kind and amount.) Are you using other food additives in the manner specified by the FDA food additive order? Are you keeping on file prescription for each medicated feed prescribed by a veterinarian?

√ 3. Are you following faithfully the requirements on usage and labeling of feeds contain "old drugs" as well as "new ones"? (For example, this includes feeds containing 3-nitro and arsanilic acid, and any feed for which medication claim is made.)

√ 4. Do you have adequate records, always up-to-date and accessibly filed in orderly fashion?

NDA's and Form 10's, and any amendments thereto, each with FDA letter stating each is effective?

Receiving report on each shipment of drug substance showing name, amount, manufacturer lot number, your lot number (if any) and date of receipt?

Perpetual inventory on each lot number of each drug substance? (Preferably showing feed batch number for each withdrawal.)

Accurate clear mixing sheet for each kind of feed in which each drug substance is used? (Preferably showing lot number of each drug substance used.)

Copies of labels or tags used on each bag of medicated feed and of label copy accompanying each shipment of medicated feed in bulk, each including required feeding directions and any precautions for the feeder to follow? (This includes custom mixes.)

√ 5. Do you keep all drug substances in a separate tight drug room, under lock and key, and available only to qualified supervisor? Is each drug substance stored in orderly, easily identified manner? Are remnants from opened bags kept in covered drums or similar tight containers with label pasted on the side (not on removable lid)? Is any spilled material immediately cleaned up?

√ 6. Are scales used for weighing drug substances (and micronutrients) sufficiently sensitive for accurate weighing and checked for accuracy daily?

√ 7. Is labelled container used for weighing each drug substance and conveying it to mixer?

√ 8. Is personnel trained to handle hazardous drug substances safely and supplied appropriate safety equipment (masks, gloves, etc.)? Is this enforced?

√ 9. Are mixing procedures clearly written out and enforced?

Is the addition of each ingredient checked before charging the mixer to

AUTHOR — A close examination of Food and Drug Administration regulations as they pertain to the feed industry stands behind the article presented here under the authorship of Dr. H. S. Wilgus, vice president and director of research, The Ray Ewing Co., Pasadena, Cal. His studies have been particularly concerned with problems in connection with compliance by feed manufacturers and other feed men. Dr. Wilgus' knowledge of the subject has been presented to the Feed Production School, at which he was a speaker as a representative of the Feed Additives Council, and at other feed industry meetings. Since receiving his B.S. and Ph.D. degrees in poultry and poultry nutrition at Cornell University, Dr. Wilgus has continued his career in nutrition as a college scientist, army nutrition officer and research director for commercial firms.

Dr. H. S. Wilgus

withdrawn March 6, 1961, until and unless sufficient data is presented to FDA to obtain new clearance. By that date, we may even see the present untenable and unfair positions of the arsenicals, diethylstilbestrol and dienestrol diacetate resolved.

It is important for the feed manufacturer or mixer to realize that his choice of drug substances is restricted. At the present writing, he cannot get a supplemental NDA or Form 10 approved for any of the "new drugs" now in common use except those against which food additive orders have been written, as given in the second paragraph preceding this one.

It is equally important that the feed manufacturer or mixer and the feeder be sure that drug substances, including antibiotics, he uses in medicated feeds be added only in the amounts and in the specific combinations, if any, prescribed in the food additive orders. Drug substances or food additives which have been cleared individually cannot be used in combination unless such specific quantitative combination has been cleared.

The feed manufacturer or mixer does not have to do any FDA paperwork regarding food additives. No FDA's or Form 10 can now be cleared for any drug substance until the food additive order pertinent to the drug substance has been issued. The status as a food additive of any substance which is not a "natural feedstuff" and which does not require a supplemental NDA or Form 10 should be ascertained from the manufacturer thereof.

AVOID EVASION — Ignorance of the law is no excuse for failure to comply. Evasion implies deliberate violation. However, it is evidently permissible to make a medicated feed for a specific customer on a written prescription by a licensed veterinarian (once on each prescription), provided a bona fide doctor-patient relationship exists for each mix. One would be well advised to enter an immediate NDA or Form 10 for future use of any medicated feed which can be so covered, thereby avoiding implied intent to evade.

REALISTIC COMPLIANCE—It is recognized that complete compliance in every detail, as indicated in part in the check-list accompanying this article, may be impossible to achieve immediately. The most important step is to accept the fact that compliance in spirit and intent is absolutely essential. The next step is to take all practicable steps immediately and conscientiously to assure that any drugs are being handled in such manner as to provide the correct level in the final feed and the proper usage of the medicated feed. Modifications in procedures and equipment to achieve the more refined controls may require more time.

Compliance with FDA regulations

(Turn to FDA, page 68)

assure it is the correct one, in the right amount, and that it is put in the mixer or mixing line?

Are drug substances, micronutrients and other small quantity items added when the mixer is partially charged and not over three fourths charged, or in such manner in a continuous mixing operation as to assure adequate dispersion?

Is mixing time after fully charging the mixer controlled to assure complete mixing?

Have you sufficiently tested mixes of different types (density, particle size, etc.) to know what minimum and maximum mixing times and procedures are safe?

V 10. Are yields checked on each mix to assure accuracy?

V 11. Is dust collection equipment adequate to avoid health hazards and to keep the plant relatively clean? Are dust collections from equipment in which feeds containing drug substances are mixed destroyed? How?

V 12. Is all mixing and conveying equipment fully grounded to avoid electrostatic charges? Such charge is not only a fire hazard but also may cause some drugs to cling to equipment.

V 13. Is equipment designed to avoid contamination from medicated feeds into other feeds? This includes mixers, conveyors, bins, packers, bulk tanks, bulk trucks, used bags. Is such equipment cleaned out and/or flushed out with inert ingredient after each run or delivery of a feed containing drug substances? Is such a clean-out material set aside in clearly labeled containers for use as ingredient in the next run of feed containing the same drug substance?

V 14. Are tags or labels provided for each run checked to be sure they are the correct ones? Is correct label copy to accompany each shipment of bulk feed provided? Do these labels carry the plant batch number?

V 15. Is required sampling and assaying specified in your NDA or Form 10 being done and copies of assay reports kept on file?

V 16. Is a conscientious and effective program of feeder education in effect to assure that he follows feeding directions required for proper usage of feeds containing drug substances?

Some grain men are moisture tester testers without even knowing it. Most often they're the bargain hunters or gimmick fanciers who always seem to end up with untried and unproven equipment. All too often the things that cost them less to buy end up costing them far more to own.

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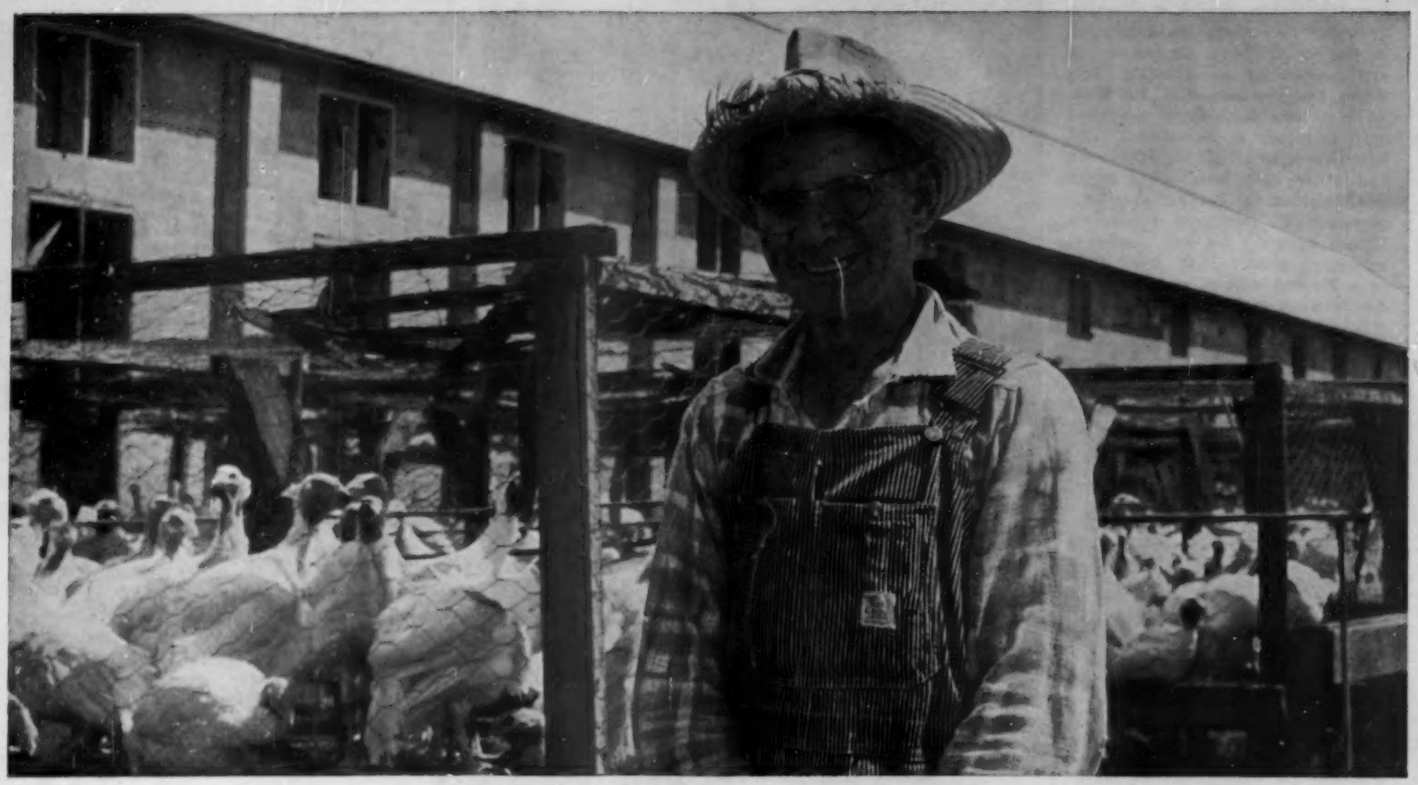

Gerald McKune, Spring Green, Wis., who plans to keep 1,200 breeders from this year's 8,000 birds, says: "I wouldn't raise breeders without nf-180."

A turkey feeding program that gets down to business

SPECIAL REPORT ON nf-180 PROTECTIVE FEEDING FOR BREEDERS

This nf-180 protective feeding program can help your customers keep breeder flock performance high. Here's how: When your customers select their breeders, recommend a ration containing 2-4 lbs. nf-180 (100-200 grams furazolidone) per ton of total feed. (In areas where paracolon and paratyphoid are serious problems, the higher level is recommended.) After 2 weeks, have them switch to a feed containing 1 lb. nf-180 (50 grams furazolidone), and recommend they keep breeders on this level through the laying season. In case of severe stress, have them put birds back on 100-gram feed until the danger has passed.

The men on these two pages have found nf-180 gets right down to business in a breeder flock . . . promotes high livability and hatchability by preventing disease and stress-caused setbacks.

You'll find nf-180 protective feeding means business in extra feed sales and steady customers, too. Encourage your customers to try it. You'll both benefit by the good results.

nf-180 protective feeding works because nf-180 prevents and controls more turkey diseases than any other drug. It is effective against typhoid, pullorum, hexamitiasis, blackhead, paratyphoid, blue comb, quail disease, CRD (air sac complex), synovitis and paracolon. nf-180 keeps performance up through stress periods. It frees hens from constant disease drag. Reduces the chance of egg-transmitted disease.

Here, in tape-recorded interviews, is what users themselves say about nf-180 protective feeding:

Gerald McKune, Spring Green, Wisconsin

A 25-year veteran at raising turkeys, Gerald McKune keeps about 1,200 breeders every fall. He first tried nf-180 5 years ago. Today he feeds it at a continuous low level (50 grams furazolidone per ton of feed).

"I particularly like nf-180 for my breeders," says McKune, who also feeds nf-180 to his growing birds.

"I guess it's because there are more ways to see results with the breeders. I get better livability, and better hatchability. You get a sturdier poult, too. I definitely would not feed breeders without nf-180!"

Don and Jerry Wharton, Sacramento, Calif.

Don and Jerry Wharton, along with their father and brother Jack, operate the Sunshine Hatchery in Sacramento. Handling eggs from 35,000 breeder hens, they hatch about 1,300,000 poults a year.

"We first used nf-180 several years ago after 4 different poult deliveries broke with paracolon," the Whartons report. "nf-180 was so effective we've used it ever since. We give our breeder men the option of using the 'week-a-month' plan or 1 lb. of nf-180 per ton continuously.

"We've found nf-180 really helps as far as rotten eggs and blow-ups in the incubators go. I'll tell you ... we wouldn't be without nf-180. Compared to what a fellow could lose, the cost of nf-180 is nil."

Hatcherymen Don and Jerry Wharton recommend nf-180 to their breeder flock owners. They consider nf-180 "low-cost insurance."

Paul Bandel, Rochester, Minnesota

Paul Bandel has been in the turkey business for 31 years. In addition to growing out and dressing birds, he keeps 2,000 breeders every year.

"We start feeding nf-180 during the holding period, and continue all through the laying season," he says. "We feel assured of better hatches and better poults.

"We feel more relaxed if we're using nf-180. We have far fewer problems and worries. Of course, we still have some problems. In fact, sometimes we really do some sweatin', because even a 2,000-breeder hen flock takes a lot of money to run through. But with nf-180, you feel less helpless. You feel you can work things out.

"I'd hate to raise turkeys without nf-180. It takes care of a number of problems, not just one specific problem like some of the other drugs. *The only reason I spend money for nf-180 is that I think it makes me good money in return.*"

Paul Bandel has "far fewer problems and worries"... more hatching eggs and healthier poults... with nf-180 in his breeder mash.

Elwood Swanson, who feeds nf-180 to 12,000 to 16,000 breeders and 150,000 growing birds, says, "nf-180 works! Hatchability is tremendous."

Elwood Swanson, Turlock, California

Owner of the Westlock Turkey Breeding Farms, Elwood Swanson is in the turkey-breeding business in a big way. He sells eggs from 12,000 to 16,000 breeders a year in all areas of the U. S. and Canada.

"We're on a very rigid nf-180 program for our breeders," Swanson says. "We also start all our poults on nf-180 to avoid disease threats and stress problems."

Asked why, Swanson replied, "nf-180 works! It's as simple as that. Our hatchability has been tremendous. And on hatchery-run poults, our mortality is never over 3%. nf-180 is doing a real good job for us."

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Crotalaria Problem Causes Increased Concern; Steps Taken to Combat It

By ROBERT H. BROWN
Feedstuffs Special Correspondent

ATLANTA, GA.—On the wall of a large national feed company mill in the broiler growing country of north Georgia hangs a sign, and attached to the sign are samples of a small seed that is causing many a headache in the grain and poultry business in the South.

The samples are of crotalaria in three stages. One is black and fully matured. The other two are in varying stages of immaturity and are of different shades of green.

The sign on the wall says: "If in doubt, DON'T!"

Translated, the message means: If there is any doubt as to whether there is enough seed to do any damage, don't process the grain.

These tiny little seeds belonging to the crotalaria family are murder to the poultry feeding business and a little less so to livestock. Just how murderous even some of the best minds in agronomy and feed analysis do not know. They say very little information is in the files, and most of what is available deals with the soil-enriching abilities of the leguminous plant. Hence, there is logic in the sign in the feed mill urging employees "if in doubt, don't."

Corn buyers are being very cautious. At the Florida Nutrition Conference reports were circulated that buyers are demanding zero tolerance.

Feed mills have instituted a policy of cleaning corn not once, but twice, which adds to the labor costs, to say nothing of a 3 to 7% shrinkage. Drying plants have started adding to the cost of cleaning corn. In Florida at least one dryer is now charging 8¢ for cleaning as well as drying.

Level of Tolerance

While buyers are reported yelling for zero tolerance in shipments, the sellers are beginning to yell back that there must be a level of tolerance some place, a margin for safety, since researchers have not come up with any definite conclusions.

The seed has been reported in practically all of the southeastern states. Lately, reports have been received by grain men and others of some crotalaria seed showing in grain from some of the western states in not only corn but such crops as soybeans.

To befuddle the situation even more and since there is no really outstanding knowledge about the plant's toxicity, a committee studying the situation for the state commissioner of agriculture in Florida has recommended more research to establish a low level of tolerance.

In meeting after meeting, attended by feed men, in question-and-answer sessions and panel discussions, hands have been raised in the audience with a question on the mind of some person. When the chair has recognized the hand, the question has been something like this:

"Just what does crotalaria plant look like? If I have ever seen one, I don't recall it, or didn't know it."

The question was popped at the annual convention of the Georgia feed manufacturers and at the North Carolina feed meeting, at the Dixie poultry institute at Asheville. And just a couple of weeks ago at the Florida nutrition conference.

This is indicative of the amount of knowledge at hand regarding the plant itself, when it is suggested at meetings that feed and grain men help educate landowners to rid their fields of it.

Plant Description?

Yes, what does the plant look like? The agricultural reference books have little on it, except that it is a leguminous plant with high value for the soil.

"It is one of the most beautiful plants you will ever see when it is in bloom," said a member of Florida's experiment station. "It has a yellow bloom and will grow just about any place. It's so pretty you want to gather it, and use it as a decorative flower."

It truly is a beautiful flower. The yellow blooms are very much like a sweet pea in physical structure. Some say it even has the odor of a sweet pea plant.

After blooming, it produces a seed pod, also very much like the pea family, but more like the well known edible English pea. The seed pod appears about the time corn is harvested, which is one of the principal reasons for trouble in the Southeast. Harvesters gathering corn snatch the pods along with the corn. Further agitation of the plants by the machinery only serves to burst the pods, scattering the seed to possibly remain dormant for 10-15 years or anyone's guess as to how long.

The pod is fat and chubby. There are two rows of seed in the average, well-developed pod, each containing

POULTRY KILLER—Pictured here is the Crotalaria plant that produces a beautiful bright yellow bloom very much like a flowering sweet pea. Photographed by a Feedstuffs photographer, this plant was discovered growing beside a railroad track in Florida. Reports are that it will grow anywhere.

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CLOSEUP VIEW—What does Crotalaria look like? Feed and grain men have asked that question in the South. Here's a closeup view of some seed pods; each pod contains two rows of from 15-20 seeds each. When dry, the seeds are black and crescent-shaped. They resemble the English pea pods.

from 15 to possibly 20 seeds. Thus, each pod contains approximately 30 to 40 seeds—enough to possibly kill a chicken if fed all at one time.

In view of the fact that some tests have shown that a total of 12 seeds fed to a chicken in one day has resulted in death within 24 hours, the potency of one pod is terrific. Florida conducted such a test. However, to be fair about it, the chickens had been fed a daily ration of lesser amounts prior to the tests on 12 seeds at one time.

This beautiful blooming plant will grow most anywhere, and its height may vary from a few inches to waist high, depending on fertility of the soil. It's quite frequently seen growing alongside highways. Railroad right-of-ways are good spots to find it, also.

The leaf is somewhat similar to the pea family and is egg shaped. The plant stem is rather brittle, and a light snap brings it to a breaking point.

Campaign Underway

Agricultural leaders are now in the process of acquainting farmers with the urgent necessity of ridding their fields of it. They have been asked to remove every plant before it seeds, if possible, this may take years. One known fact is that the seed scattered to the ground may not emerge for years. The seeds are that hard-shelled, and as one feed man said, "You can hardly crush the shell with a hammermill!"

It was during the depression days of the 1930's that crotalaria was the answer to the financial condition of the South's pocketbook, fertilizer-wise. Crotalaria was described as "the poor man's fertilizer." The federal government brought the plant south and encouraged farmers to plant it; even paid for its planting. As a soil rebuilder, everyone sings its praises.

But as a source of feed for poultry and livestock they now curse its existence. It has also been described as "a friend turned foe."

Doyle Connors, Florida's agriculture commissioner, who has a special committee seeking to bring facts to him on the plant and how to control it, came up with the suggestion that since the federal government was instrumental in bringing it south it should, if funds are available, help fight it.

The committee also wants further research on the level of tolerance. The committee feels that zero tolerance might possibly be too much to ask since there is little available information.

Millers and grain men are bringing in machines to clean corn. A number of machinery men are experimenting to develop more efficiency. In south Georgia, where peanuts are grown, some are using a peanut cleaner with slight alterations. One peanut machine designer is offering his machines to grain people.

With most of the fall crop in the Carolinas and much of Georgia in, the pressure is off to a degree. In Florida, where the corn is now being harvested, the pressure is on.

What next year brings remains to be seen. Perhaps crotalaria will take the next growing season as one to remain dormant. Perhaps by that time better cleaning equipment will be available. Perhaps a low tolerance range will have been established. Nevertheless, the fact does remain that some method of controlling the plant must be developed. Or so agricultural leaders, grain men and feed men say.

Georgia Poultry Date Changed to Jan. 18

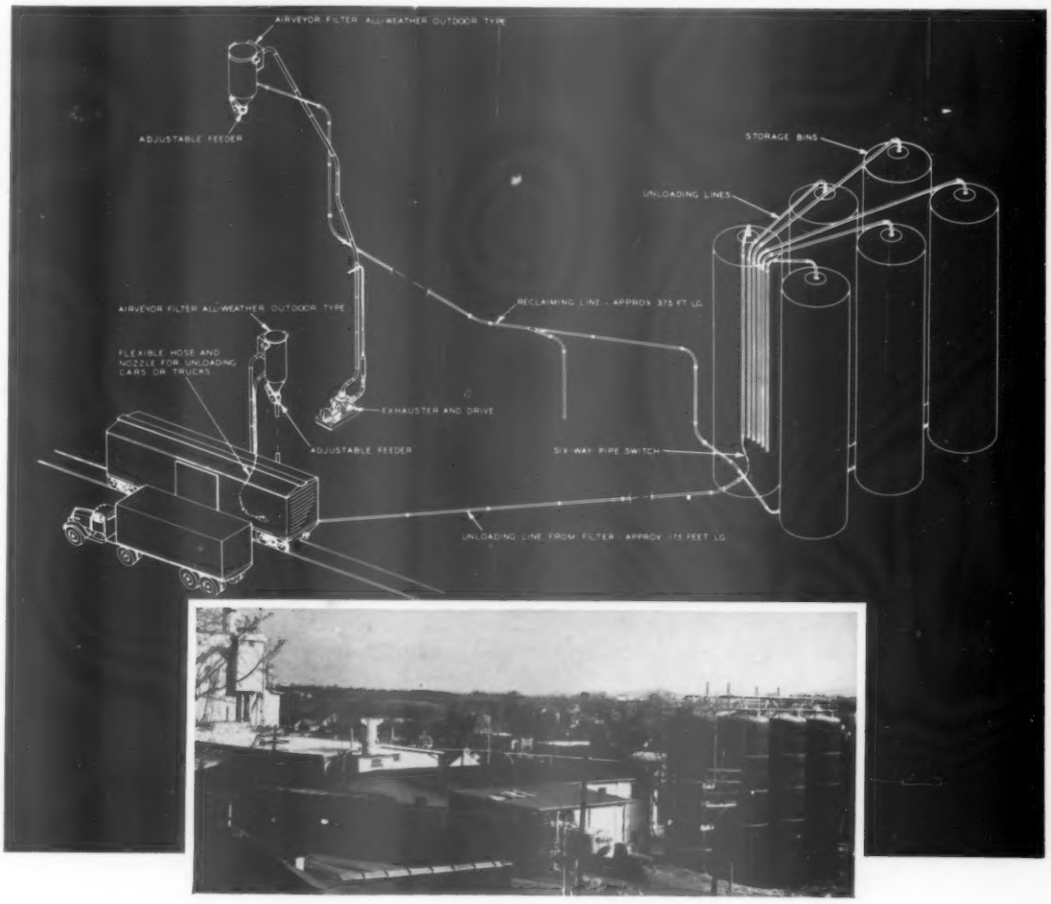
GAINESVILLE, GA.—The annual meeting of the Georgia Poultry Federation will be held in Gainesville Jan. 18 instead of during the annual Southeastern Poultry & Egg Assn. convention in Atlanta.

Arthur C. Smith, president, said it was hoped the change would bring about better attendance. Because of conflicts at the Atlanta convention, the federation's meetings have frequently been poorly attended, he said.

The exact time and place for the meeting will be announced later.

FEED MAN ELECTED

TUCUMCARI, N.M.—K. I. Langley has been elected to the New Mexico State Board of Education. Mr. Langley is a feed manufacturer and dealer in Tucumcari and a director of the New Mexico Grain & Feed Dealers Assn.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The arithmetic of materials handling

One man + one mill + Fuller pneumatic conveying = work of four mills

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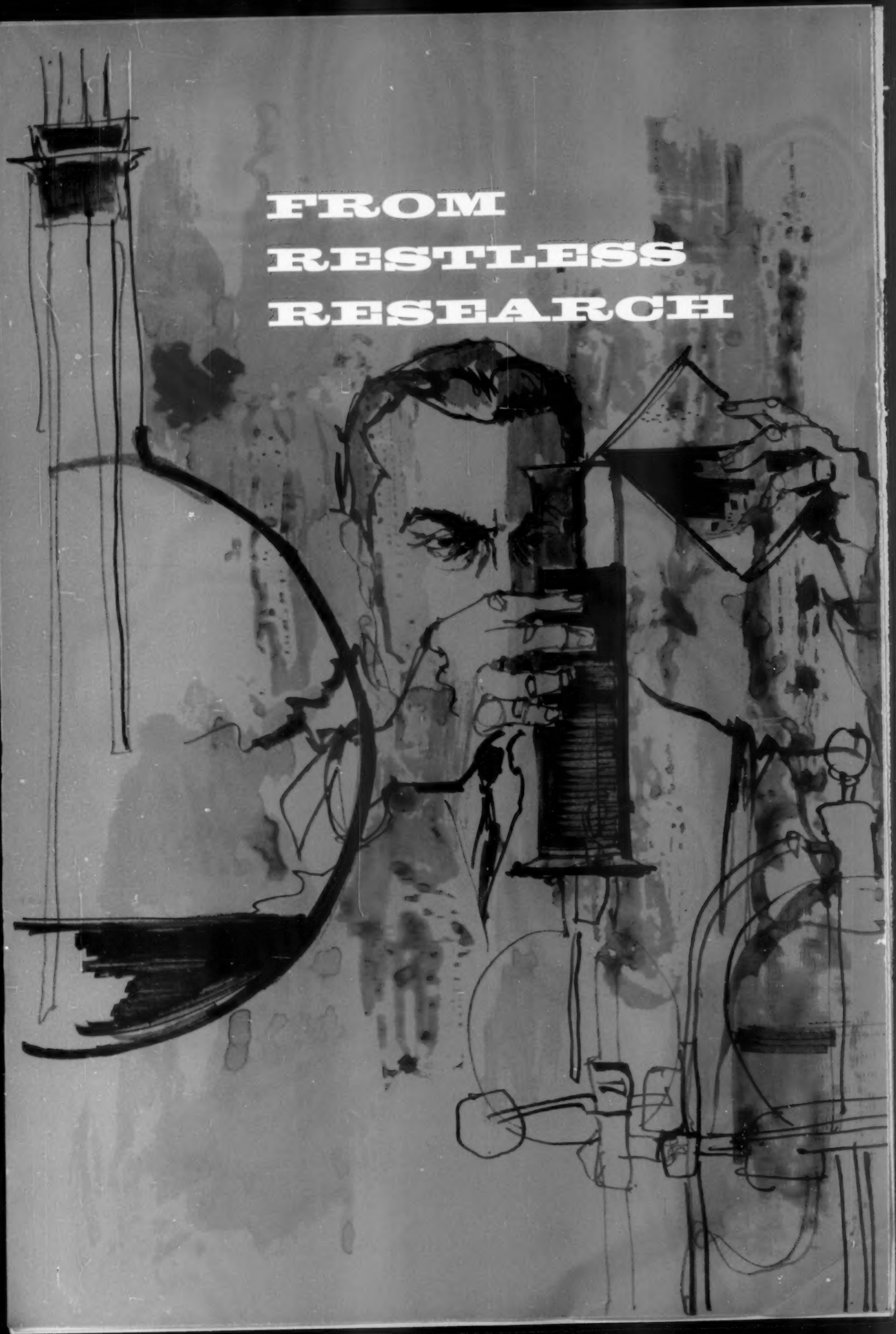

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Nutritionist Says Roughage Testing Use Will Gain in Dairy Feeding Plans

FOSTORIA, OHIO—The prediction that "roughage testing will be used by every good dairy farmer within the next five years" has been made here by Milton P. Kalmbach, nutritionist, Ohio Farmers Grain & Supply Assn.

He says that testing roughage being fed and comparing the resulting chemical analyses with the daily nutrient requirement of individual cows within a herd constitute an accurate, scientific and practical approach to planning a specific feeding program.

"At the present time most commercial dairy cattle feeding programs are only 'rule of thumb' programs," he says.

Although Ohio Farmers' nutrition department has just published a new dairy cattle feeding program that comes close to a roughage testing program, the cooperative believes it must take another step forward by establishing a "real" roughage testing plan. The organization is already experimenting with one and hopes to have it ready for practical application within a short time.

"To test each farmer's roughage and to figure an individual feeding program for each farm involves a considerable amount of work," Mr. Kalmbach notes. "Maybe in six months to a year we will have the personnel needed to carry out this roughage program."

Here's how a roughage test is worked into a dairy feeding plan, as explained by Mr. Kalmbach in a bulletin for farmers.

"Each milking cow has daily requirements for each pound of milk produced and for maintenance according to body weight. The dairy nutritionist usually adds up the daily requirements for each cow for digestible protein and TDN (total digestible nutrients). He then figures how much digestible protein and TDN is in the roughage the cow is eating and this amount is subtracted from the digestible protein and TDN requirement of the cow. The difference in digestible protein and TDN has to be supplied by the grain and supplement mixture."

Example

The following example further explains application of roughage testing:

Daily Nutrient Requirements for a 1,200 Lb. Cow Producing 35 lb. of Milk

	Dig. protein (lb.)	TDN (lb.)
Maintenance	0.76	9.3
Milk production	1.61	10.5
	2.37	19.80
Roughage supplies	1.39	12.42
To be suppplied by grain and supplement	0.98	7.38

Therefore, the following mixture needs to be calculated in order to supply this protein and TDN.

Feed Mixture		
6 lb. corn and cob meal	0.32	4.38
4 lb. ground oats	0.36	2.80
1.5 lb. O.F. 32% dairy	0.39	1.02
Total	1.07	8.20

Roughage testing begins with gathering a sample of corn silage, grass silage, hay or the like and having it analyzed for protein, moisture and fiber. From this chemical information the percent digestible protein and TDN is calculated.

Mr. Kalmbach reports that three or four state university extension departments are testing roughages for farmers in their states. In addition to submitting roughage samples, farmers also send in information regarding amounts of roughage available, kind and amounts of grain, average body weight of the milking herd and average daily milk production. From all this information the college dairy nutritionist can make up an individual feeding program for each dairyman.

Mr. Kalmbach reports that Ohio Farmers' dairy cattle feeding program, which he says "comes very close" to a roughage testing program, takes into consideration each cow's body weight, its production, its condition and the quality and amount of roughage.

Two Promotions Listed At Ghostley's Poultry

BUFFALO, MINN. — Two promotions have been announced by Fred Ghostley, general manager of Ghostley's Poultry Farms in Anoka, Minn.

H. M. Powelson

Joe Eustice has been promoted from business manager to assistant general manager of the firm. His appointment is effective immediately, according to the announcement. Replacing Mr. Eustice as business manager is Harold M. Powelson, Buffalo, Minn.

Mr. Powelson received his B.B.A. degree in business administration from Tulane University in New Orleans. He was formerly director of business training for the Times-Picayune Publishing Co. of New Orleans. He is married and now lives on a farm near Buffalo, where he keeps 2,000 to 3,000 Ghostley layers.

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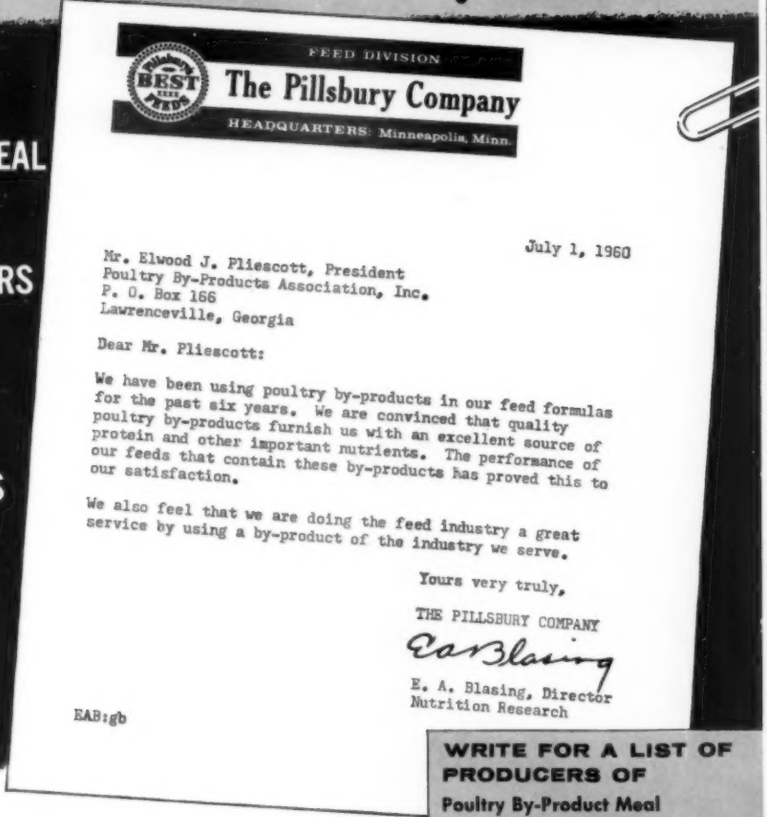

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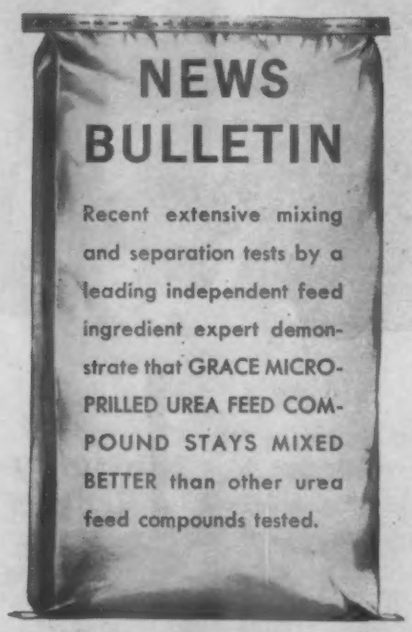
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Research Vital to Sheep Industry, Says Speaker at Iowa Sheep Day

AMES, IOWA—"Scientific research will determine the future of sheep feeding," Dr. U. S. Garrigus, animal husbandman from the University of Illinois, told about 200 Iowa sheepmen at the annual All-Iowa Sheep Day at Iowa State University.

"Unless the sheep industry moves decisively to strengthen research, the future is not too bright," he warned. "The lamb feeding industry faces growing competition from other areas and other products."

Dr. Garrigus said that natural advantages should favor continued growth of the midwestern lamb feeding industry—if it meets needs for continuing full support to do research work that is costly and time-consuming.

He also cited recent Illinois research which points to a higher percentage of protein in the carcasses of lambs on high-roughage rations.

"Also, I've been surprised that buyers don't like the softness of roughage lambs' so-called 'fat.' They may not actually be grading fat, the research indicates, but more study is needed to reveal the full possibilities for production of better lambs," he said.

As mass feeding and mechanization increases (as many as 70,000 lambs are fed out yearly in one western feeding enterprise), midwestern sheep feeders will need to know more and more about their industry and their feeds if they are to continue to compete, said Dr. Garrigus.

Following are summaries of some of the research reports presented at the All-Iowa Sheep Day. Earlier summaries of other topics presented appeared in the Nov. 19 issue of Feedstuffs.

PERFORMANCE OF LAMBS FED CONVENTIONAL, MIXED OR PELLETED RATIONS—The feeding of either a complete mixed ration or complete mixed and pelleted ration containing 60% or more of concentrate to lambs resulted in an average of 15% higher daily gains than feeding of the conventional ration in trials at Iowa State University, said animal husbandman Dr. Walter Woods.

The lambs on the mixed or pelleted rations also consumed more feed than lambs on the conventional ration. However, lambs on the pelleted ration consumed less feed than the lambs on the mixed rations.

Feeding a pelleted ration decreased the amount of feed per 100 lb. of gain. Feeding the same constituents as a mixed ration did not consistently lower feed required per 100 lb. of gain, reported Dr. Woods.

The experiment's objectives were (1) to compare performance of lambs fed conventional high-concentrate rations of shelled corn, alfalfa hay and supplement with lamb performance on a complete ground and mixed ration or complete pelleted rations; (2) to determine feed costs for the three systems of feeding, and (3) to determine the feasibility of using a low-quality roughage in a pelleted ration.

The three forms of rations used in the first trial included a conventional ration of shelled corn, alfalfa hay and supplement, a complete ground and mixed ration and a complete ground and mixed ration pelleted in one-fourth inch pellets. A fourth ration was also fed in which oat hulls were used as the main source of roughage.

In trial 1, wether lambs averaging 89 lb. at the start were divided into two lots of 20 lambs each and were fed each ration for a 63-day period.

In trial 2, wether lambs averaging 66 lb. at the start of the trial were divided into two lots of 11 lambs each and were put on a 91-day feeding period.

Feeding an approximately 40% concentrate ration as a complete mixed ration did not improve lambs' gains. However, feeding the ration in the pelleted form increased gains by 0.09 lb. per day. This was primarily due to increased feed consumption.

The lambs on the pelleted ration consumed an average of 0.23 lb. more feed per day than the lambs on the mixed ration and 0.5 lb. per day more than lambs on the conventional ration.

Gains were similar for the lambs fed either the 40% or 60% concentrate pelleted rations. "It is interesting to note," said Dr. Woods, "that the lambs on the 40% concentrate pelleted ration consumed 0.59 lb. more feed per day than the lambs on the 60% concentrate pelleted ration. The live grades were similar for the two groups of lambs fed the pelleted rations."

The feed costs per pound of gain were in favor of the conventional rations. In trial 1, feeding the ration in the mixed form increased feed costs by 2.3¢ per pound of gain. Feeding as pellets increased cost by 2.6¢ per pound of gain as compared to the conventional ration.

Dr. Woods pointed out that these costs represent only the feed costs. They do not take into account possible labor saving and other advantages of feeding pelleted rations. Based only on the average feed savings due to feeding a high concentrate pellet, one could afford to pay $2.75 per ton for the pelleting process.

The pelleted oat-hull ration supported faster gains and higher feed efficiency than any of the other rations compared in trial 1. This would indicate that low-quality roughages can play a major role in supplying the roughage for pelleted rations. The feed costs were higher for the oat-hull pelleted ration than any of the other rations. It is possible that in certain situations low-quality feeds could be economically incorporated into pelleted rations.

HIGH SOYBEAN MEAL STARTER RATION FOR FATTENING LAMBS—One objective of this test, according to Dr. Woods, was to start

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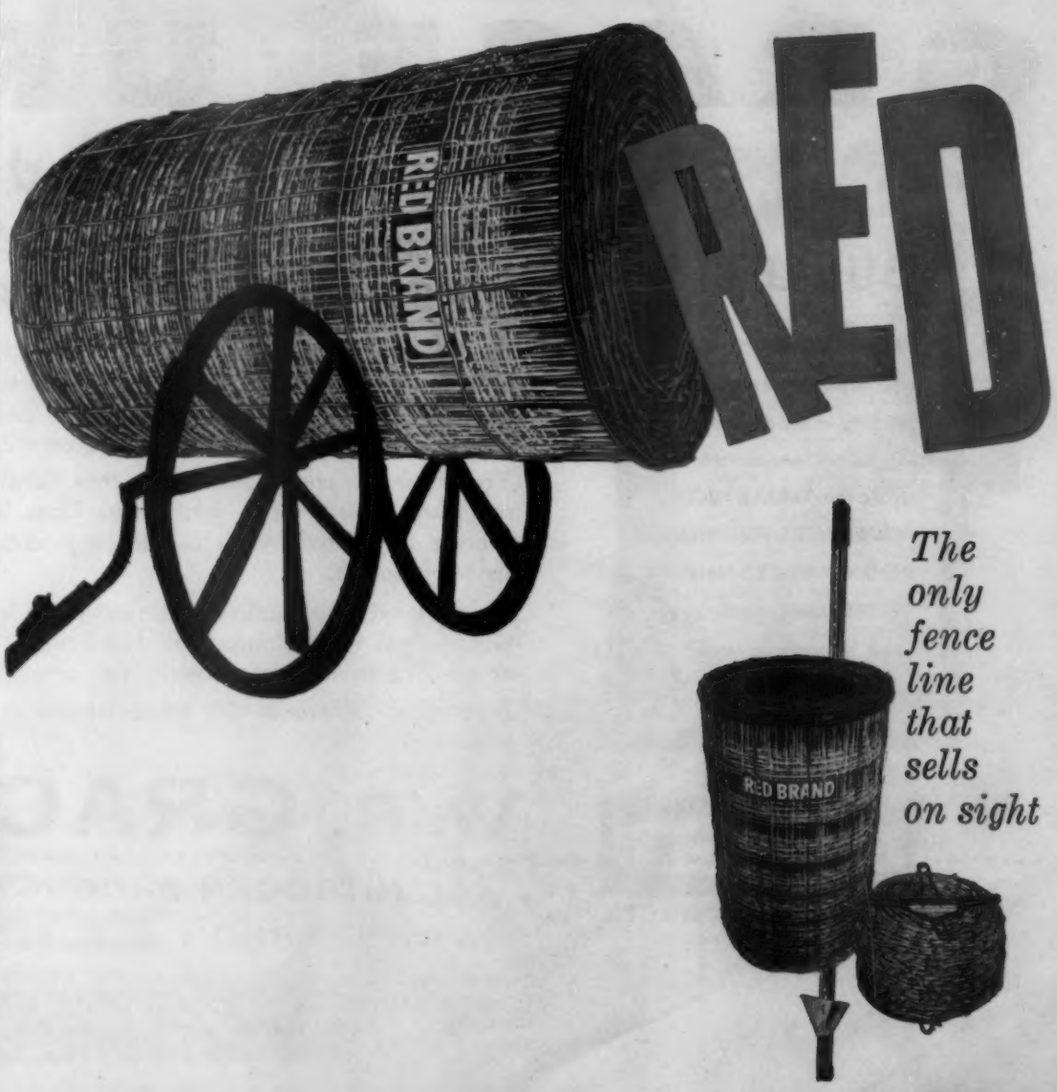

The only fence line that sells on sight

lambs on a full feed of soybean meal and compare their performance with that of a group of lambs started on feed in the usual manner. A second objective was to try to increase the corn intake in the last one-third of the feeding period by decreasing the amount of alfalfa hay fed, and thus increase gain and carcass fatness.

Western wether lambs averaging about 79 lb. were used in the experiment. Two lots of 20 lambs each were allotted to each of four treatments. The treatments were: Basal, basal plus corn increased the last one-third of feeding period, soybean meal starter and soybean meal starter plus corn increased the last one-third of feeding period.

The lambs started on the high soybean meal, during the first 10 days, ate an average of 1.5 lb. of concentrate (corn plus soybean meal) per day as compared to 0.75 lb. per day for the basal lambs. However, they gained faster during the first weigh periods but did not maintain the same advantage throughout the entire trial.

The lambs fed the soybean meal starter gained an average of 0.05 lb. more per day than the lambs fed the basal ration. The lambs fed the soybean starter, plus increased corn in the last one-third of the feeding period, did not gain any more per day than lambs on the basal ration. Increasing the corn in last stage did not result in gains any faster than those of the basal lambs. The lambs actually would not take an increase in corn even though hay was reduced.

There was little difference in the average time required for the lambs to reach market weight. The results of this initial trial would indicate that soybean meal can be fed at a high rate in starting lambs on feed. However, the advantage of increased gains and shorter time in the feed lot was not consistently found in all cases.

ANTIBIOTIC FEEDING TO FATTENING LAMBS — The feeding of Aureomycin for the first 21 days of the test, at the rate of 10 mg. per day failed to increase average daily gain. However, including it in the ration for the full feeding period increased average daily gains by 16% over the controls. This increased gain was reflected in a decreased feed requirement per pound of gain and a lower feed cost per pound of gain.

Dressing percent and carcass grades were similar for the lambs fed the basal ration, and the ones fed antibiotic for the full time. There were no death losses on any of the treatments and thus vaccination or antibiotic feeding could not be evaluated as an aid in controlling death losses.

In a second trial, the performance of the lambs was similar for the different treatments. "The reasons why antibiotic feeding did not increase the lambs' performance are not known. It is possible the disease level in the second trial was lower," said Dr. Woods. "A low disease level in a group of lambs could account for the absence of a response to antibiotic feeding."

FAT ADDITIONS TO LAMB FATTENING RATIONS—The addition of 5% corn oil to the alfalfa hay ration in this test improved rate of gain and decreased feed required per 100 lb. of gain. But the adding of 1% calcium carbonate to the alfalfa ration with or without added corn oil did not improve performance. Also, adding 5% corn oil to the ration containing corncobs did not influence the rate of gain. Calcium carbonate addition to the corncob ration in the absence of corn oil appeared to increase rate of gain and feed efficiency and carcass grades and dressing percentage were slightly improved by fat additions to the alfalfa hay rations.

In another trial using corncobs, the addition of 5% stabilized grease depressed daily gains slightly. It would appear that corn oil is utilized efficiently by lambs when fed in rations containing alfalfa hay, but not when corncobs are used as the source of roughage, say Iowa State University researchers.

POISONOUS PLANT LISTING READY

An extensive bibliography on poisons and poisonous plants appears in the recently released proceedings of the annual meeting of the American Association of Feed Microscopists. The bibliography was prepared by Dr. A. W. Uren and Dr. A. A. Case of the Missouri School of Veterinary Medicine. Copies of the bibliography are available from the group's secretary, G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

Cattle Feeding Up

LORAINE, TEXAS — A renewed interest in cattle feeding seems to be sweeping this area. Most herds average from 25 to 150 in size and are being fed farm-grown maize as the main energy source.

Most feeders have stored their maize in a grain bank, then have the feed mill mix the grain with a supplement as it is needed. Some land owners, who do not have the proper facilities, are placing their cattle in custom-feeding lots for 5¢ per day per head plus price of the feed.

Higher farm incomes resulting from two good crops have put farmers in a financial condition where they can buy feeder cattle more easily than in former years.

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$36,800 Grant to Georgia for Research Of Poultry Bruises

ATHENS, GA.—To assist in the study of bruising of birds in poultry processing, a federal grant of $36,800 has been made to research scientists at the University of Georgia Agricultural Experiment Station here by the U.S. Public Health Service.

Equal amounts of the fund will be used this year and next to carry on research which it is hoped will lead to a reduction in the number of bruises, a condition that is costing Georgia poultry producers from two to three million dollars annually.

Although several research projects related to bruising have been or are now being carried on at the university, the project supported by the public health service covers microbiology, pathology and biochemistry of bruised tissues.

The national service is interested in pursuing these fields because bruised tissue may be a source of contamination for other birds during dressing and processing, Dr. M. K. Hamdy, a member of the department of food technology, said. Also to be explored is the effect on plant workers as well as consumers.

Established Facts Helpful

A number of facts helpful to further study have already been established, according to Dr. Hamdy, although much still remains to be learned on the subject of bruises.

Dr. Hamdy is continuing some experiments he started when at Ohio State University which were largely based on bruising of larger animals. One of the well-known facts, he said, is that when a bruise occurs, natural bodily functions act to heal the damaged tissue in such a way that the second and third bruises in a series heal more rapidly than the first.

The speedup may be due to the action of enzymes. Encouraging results have been obtained in accelerating healing by injecting the enzyme trypsin into bruised animal tissue.

Dr. Hamdy and his assistants, Drs. J. J. Powers, Kenneth N. May and Samuel C. Schmittle, are pursuing such techniques to see if there is a practical way of reducing poultry bruise losses.

There is, too, the possibility that such experiments may lead to further solutions of how to cope with bruising of hogs and beef cattle.

Nutrena Post Filled

LINCOLN, NEB.—B. F. Milhoan, former salesman for a regional feed firm, has been named Nutrena Feeds territory sales manager for south-central Nebraska, according to Dale F. Broekemeier, district sales manager here.

Mr. Milhoan will headquarter in Lexington and service livestock and poultry production systems and feed programs to area farmers, Mr. Broekemeier said.

Mr. Milhoan is a native of Overton, Neb., and has been associated with Hill and Fairchild, Supersweet and Quaker Oats feeds.

Arbor Acres Names Sales Representative

SPRINGDALE, ARK. — Appointment of Merle M. Schoeffler as sales and service representative has recently been announced by Arbor Acres here. He will cover the southwest area and work mainly with the Mt. Hope Leghorn, the firm reports.

Merle Schoeffler

Mr. Schoeffler is 33 years old and a graduate of Oklahoma A&M. For the past three years Mr. Schoeffler was district sales manager for the Ralston Purina Co. covering central Arkansas and formerly was connected with Nutrena and with Seco, Inc., manufacturers of feed equipment. With both latter organizations he covered midwest territories and is well known throughout the entire area.

Williamson Co. Lists Management Changes

WHITTIER, CAL.—Robert O. Anderson, president of John W. Williamson & Sons, Inc., Whittier, Cal., has announced new management responsibilities designed to strengthen the sales and service programs of the company. The firm manufactures and distributes feed mill equipment.

New appointments include: T. A. Sacra, executive vice president, administration and production; Glenn Y. Williamson, vice president, sales; Richard K. Eubanks, sales manager with advertising and marketing responsibility, and J. W. Purcell, engineering staff.

The Williamson company, a wholly-owned subsidiary of the Hondo Oil and Gas Co., Roswell, N.M., has been manufacturing cattle feed milling equipment for over 40 years, says President Anderson. He added that the firm will expand shop facilities soon and introduce a new line of small feed mills designed for the feeding of 100 or more cattle.

J. R. Hull Appointed Honeggers' Secretary

FAIRBURY, ILL. — The appointment of J. Richard Hull as secretary to the board of directors for Honeggers' & Co. has been announced by Sam R. Honegger, chairman of the board. Mr. Hull has been associated with the company's legal department since 1959 and served this past year as secretary of the junior board of directors. Prior to joining Honeggers' & Co., he served as general counsel for a Bloomington, Ill., corporation. He also taught business law and speech at Illinois Wesleyan University.

J. R. Hull

Mr. Hull received his education at Illinois Wesleyan and Northwestern University School of Law.

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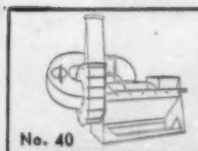

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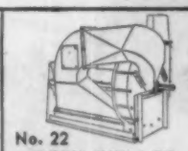

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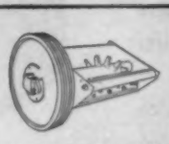

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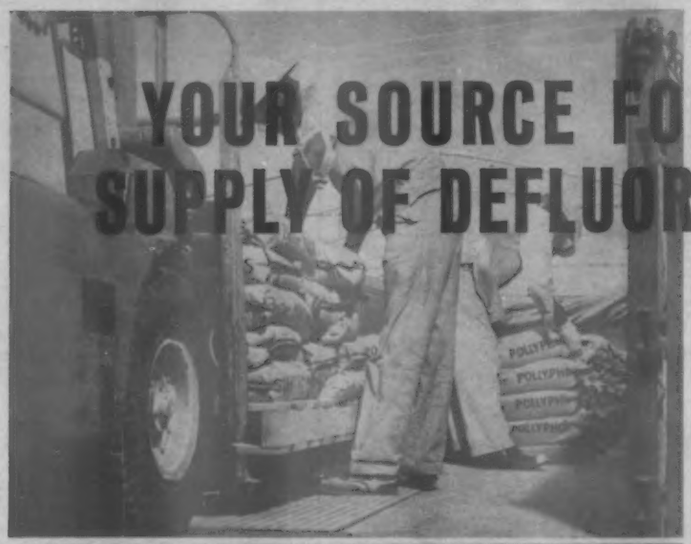

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HOOKER CHEMICALS PLASTICS

JOE BROOKS

BY AL P. NELSON

Free Ideas Can Boost Sales

The warm kitchen heat felt good to Myron Kelley, and his nose twitched a little when it picked up the fresh scent of golden brown coffee bread that his plump, merry-faced wife Alice was taking from the oven.

He had just stepped inside from the cold winter air. His glasses steamed and his nose and cheeks were red. He took off his glasses and began wiping them with a handkerchief.

"Hey, Alice, I think I'll take a cup of coffee and a wee slice of that fresh coffee cake before I go out and milk the cows," he said. "Got kinda cold drivin' out from town. That car heater sure has to put out on a cold day like this."

Obediently his wife put down a steaming cup of coffee and a slice of coffee cake. Myron sipped the coffee.

"Alice, what do you think that Joe Brooks is doing now?"

"Haven't the slightest idea, Myron. He's always doing something. I quit trying to keep track of him."

Myron chuckled. "Well, he's had a carpenter there assembling a plywood desk. A desk that farmers can use. Joe's got the specifications, and a farmer can build it himself."

"Does Joe give the farmers free plywood?"

Myron laughed. "Not Joe. He gives away ideas, but not plywood. By golly, Alice, that's a neat desk though. Joe says the plywood costs only $13. You oughta see the farmers that were standin' around watchin' that carpenter work, and talkin' to Joe."

"That's the trouble with you men," grumbled his wife, washing a few baking pans in the sink. "Every time you go to town you stay too long. You just stand around and talk and tell jokes when you oughta be home farmin'."

Myron flushed a little. "Oh, no, Alice. A farmer's got to keep up with things nowadays. He's gotta mix with other farmers and dealers and exchange talk. That's the way you learn."

"You sound just like that Windy Kramer that sells for Joe Brooks," said his wife, wiping a pan. "He's always got some new advice when he comes here."

"Well, it's a competitive world," said Myron. "By golly, that Joe Brooks is on his toes. He's going to set that plywood farm desk up in his window. And he showed us some signs that are goin' in the window, too. One is going to say that farming is big business today and that the wise farmer can make money sitting at his desk makin' out accurate records just as he can make money milkin' cows or caring for hens or hogs. In other words, study your costs."

"We're busy enough now," said his wife. "If you're going to spend nights working at your new desk, I'll have to watch Mother Murphy's Fifth Marriage by myself on television."

"Aw, I watched that for five years," said Myron. "I'm gettin' a little tired of it. And since you speak of it, I think I will build one of those plywood desks. We shouldn't keep our records in those paper cartons. Takes too long to go through them."

His wife looked skeptical. "You build a desk, and first thing you know you'll be buying a filing cabinet, too."

"Mebbe," said her husband. "Joe is going to call a meeting of farmers sometime this month. He's going to have case histories of farmers that got good offices and records. And he's got a connection with some office appliance dealer in the city that's got some used filing cases for sale, too."

"How come you're getting so interested all of a sudden in uptodate office stuff?" demanded his wife. "First thing you know you'll be gettin' high toned and want a red headed stenographer."

Too Old for That

"Naw, I'm too old for that," said Myron.

His wife looked angry. "You mean if you were younger you'd—" she broke off, her lips thin.

"Of course not. Let's get sensible. You know what I mean, Alice, I've

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got a pipeline milking system and bulk tank. I've got mechanization all over the place. It saves me labor and hired men, and I'm making money easier than I did before. Joe says if a man is modern in his farming, he oughta be modern in his bookkeeping, too. And he's right."

"Is he going to try to sell you more feed, is that it?"

Myron sighed. "I'm buying plenty from him the way it is. But Joe is right. I ought to know how much it costs me to feed each cow according to production. I ought to know how to depreciate my machinery. I ought to know how much I can make discount-wise booking chicks, seeds and fertilizer in advance, and lots of other things. And if I have a neat modern office with the right records I can do that. A modern office—and a modern mechanical farm — those things go together."

Alice looked a little more pleasant. "Maybe you're right, Myron. We've been doing okay in spite of low farm prices. That's 'cause we've always been hard workers and savers. Maybe I could help you with that office and set it up neat in the end of our big utility room."

Myron grinned. "Gee, Alice, that's the spot I had picked out. I was hoping you'd let me have it."

"I want a nice desk," Alice said. "I don't want any old rough looking thing. You can build it, but I'll sand it and varnish it. And we don't want any old scratched files. If we're going to have an office, let's have a respectable one. Come to think of it, I have been worrying about our records in those old paper cartons. If we drive around in a Buick and have a new IH farm truck, why can't we have a decent office, especially since it will help us study our farm business and know what our costs are?"

Myron wiped his lips. "That's the way to talk, Alice. I knew I married the right woman. You always come around when you see the facts. You got a good brain on you."

His wife flushed. "Oh, go on now. The cows'll be bellowing to be milked in a minute."

Myron got to his feet. He knew his wife liked his praise. "How about you comin' to town with me in a couple of days. We'll visit Joe Brooks, see that window display of a model farm office, and maybe talk to Joe a little."

His wife nodded. "And maybe I can go to the Leader Store, too. I need some new pretty quilt material. They'll have a sale on one of these days, I think."

NEW 'P.R.' MANAGER

ST. JOSEPH, MO.—Ralph Melon has been named personnel and public relations manager for Dannen Mills. Previously, he was assistant advertising manager for the company. In recent months Mr. Melon has been directing the promotion of the firm's 25th anniversary in the feed business.

Pfizer Issues Disease Control Booklets

NEW YORK — Ways to improve disease control and build profits in the poultry business are the topics of two booklets now available from the Agricultural Division of Chas. Pfizer & Co., Inc. These booklets are on the "Life Cycle Broiler Program" and "Laying Cycle Management Program."

According to a Pfizer spokesman, "It is never wise for the producer to eliminate the concept of 'complex etiology' underlying many of the disease problems in broilers. Similarly, with layers, it is essential that the producer take into account all of the stresses that lie just under the surface to rob producers of eggs they could have had."

Copies of the two booklets are available from Chas. Pfizer & Co., Inc., Agricultural Sales Division, 800 Second Avenue, New York 17, N.Y.

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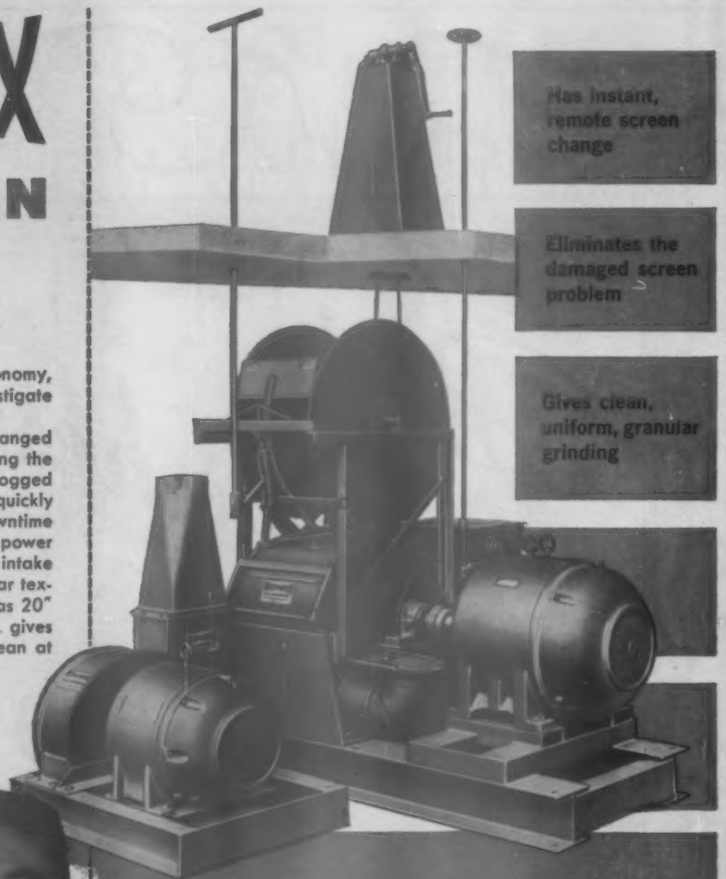
REMOTE SCREEN CHANGE HAMMERMILL

Whether you are interested in speed, convenience, economy, capacity or quality of grind . . . it will pay you to investigate the Kelly Duplex Remote Screen Change Hammermill.

Here are just a few reasons why: • Screens can be changed instantly by a single turn of a crank . . . without stopping the mill . . . and without leaving the service floor • Torn or clogged screens, regardless of the amount of damage, can be quickly and easily removed and replaced without costly downtime • Mill is guaranteed to grind more grain with the same power than any other make—or your money back • Special intake arrangement assures a clean, uniform product of granular texture . . . mill does not whip feed into a floury dust • Has 20" throat—delivers high capacities • Built low to floor . . . gives you a larger pit area • Separate blower keeps mill clean at all times • Heavy steel construction throughout assures top performance and long life under hardest use.

Make your own "point-for-point" comparison. Mail card today for literature and full details. See for yourself how much more you get with a Kelly Duplex Remote Screen Change Hammermill . . . and how much more it will do for you.



"In our elevator at New Hope, Ohio, we have a Kelly Duplex Remote Screen Change Hammermill powered by a 75 HP motor on the mill and a 30 HP motor on the blower. It saves us time and steps in servicing customers . . . and gives us a product that looks like it had gone through a grader to get a more even grind. I would recommend this mill to anyone."

Bob Arnaout

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- ☐ Corn Cutter and Grader
- ☐ Corn Sheller with Blowers
- ☐ Pittless Corn Sheller
- ☐ Regular Corn Sheller
- ☐ Magnetic Separator
- ☐ Cob Crusher
- ☐ Bucket Elevator
- ☐ Pit Auger
- ☐ Chain Drag
- ☐ Twin Molasses Mixer
- ☐ Instant Screen Hammermills
- ☐ Corn Crusher-Regulator
- ☐ Grain Blower
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FEEDSTUFFS

FDA

(Continued from page 53)

by the feed manufacturer may be somewhat difficult. It is not expected to be as unreasonable as many people seem to fear. Procedures required in the mill are essentially those of good business operation and sound plant practices necessary for producing reliable feeds whether medicated or not.

THE WELCOME MAT — It is urged that the FDA representative be treated courteously, calmly and cooperatively. Be frank, not furtive. Receive his suggestions with an open mind. Should a suggestion appear impractical, explain why you so consider it. He is as eager to learn as you should be. Suggestions should be mutually helpful. After all, he is performing his assigned duty, prescribed under the law that we, the public, requested.

REFERENCES — Assistance on specific questions can be provided by:

1. The supplier or manufacturer of the drug substance.
2. Your state feed control representatives.
3. Studying state feed control regulations and the Official Publication of the Association of American Feed Control Officials.
4. Your state feed trade association.

v v

Possible Changes in Supplemental Drug Applications Cited

A report believed to reflect considerable relaxation of some of the previous requirements of the Food and Drug Administration relative to amendments of effective New Drug Applications was issued after the foregoing article by Dr. Wilgus was written.

Dr. Wilgus called attention to the report, which was sent to feed manufacturers holding effective supplemental NDA's allowing stilbestrol in feeds. It was sent out by Elanco Products Co., division of Eli Lilly & Co.

It is believed that the term "minor change proposal" may be the key wording in submitting any modifications, rather than requesting an amendment.

Although Elanco's report deals only with diethylstilbestrol, it appears likely that it might exemplify a new attitude on the part of FDA in matters which might be applicable also to other drugs.

Here is what the Elanco report said:

To: All Feed Manufacturers Holding Effective Supplemental New Drug Applications Allowing Diethylstilbestrol in Feeds.

Although the Food and Drug Administration will not accept new supplemental applications for inclusion of diethylstilbestrol in beef cattle and sheep feeds because of the Delaney clause, there are certain allowable changes for holders of effective supplemental applications. To date the following changes have been allowed:

Change in brand name of feed.

Change in feed name (Example: XYZ Beef Builder to XYZ Steer Builder).

Change in formulation in feed ingredients (i.e., soybean oil meal, cottonseed oil meal, linseed oil meal, wheat shorts, middlings, urea, trace minerals, vitamins, etc.).

Change in guaranteed analysis.

Change to provide for bulk feed distribution.

Change to eliminate other drugs (i.e., dynafac, rumen bacteria, enzymes, antibiotics, etc.).

Allow for addition of new mixing equipment.

Change in company name only.

The above change(s) will now be allowed only on the basis that the original feed will be discontinued after the change(s) have been made.

The following **will not** be allowed:

Change in diethylstilbestrol level.

Addition of another drug additive or antibiotic.

Approval for these can be obtained by the submission of a minor change proposal to the Food and Drug Administration.

Prospective Dealers Tour Honeggers'

FORREST, ILL.—A group of prospective dealers were flown to Forrest, Ill., from every sales territory in Iowa Nov. 2 to tour the Honegger research farm, the Fairbury offices and the feed mill. Six planes were used to bring the entire tour in and return everyone to their homes the following morning.

This "dealer roundup" was a promotion put on by the Iowa sales force to create new buisness outlets. To qualify for the trip, each Iowa district manager brought at least one guest.

The nine prospective dealers and their hosts arrived in time for fried chicken dinner at noon. The afternoon was spent touring the research farm, Fairbury offices, the mill, advertising facilities at Record Advertising Agency, and Record Printing Co. Company officials met the group for a steak dinner and an evening program at which several Honegger officials briefly explained Honeggers' philosophy of business, depth of management and growth and progress in business.

Dealers present added a few words to give substance to the "Honegger success story." They were Marwood Hendrix, Hendrix Hatchery of Herscher; Cliff Bossung of Dawson County Feed Products Co., Lexington, Neb.; Ed Ringger of Honegger Associate Store, Gridley, Ill., and Ross River, Ross River Feed & Hatchery, Maquoketa, Iowa. A. W. Moenkaus, president of Midstates Bag and Container Co. of St. Louis, was a guest speaker.

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Also
MINERAL BLOCKS
WRITE FOR PRICES
FARMERS FRIEND MINERAL CO.
NAPOLEON, OHIO

Despite the almost annual introduction of new coccidiostats...

nfz® and *bifuran* still come closest to what you and your customers look for in a coccidiostat for replacement birds!

During the last few years — amid a lot of fanfare and promises — several new coccidiostats have been introduced to the feed industry.

While some have started off well, they have failed to live up to their advance billing. Not one has solved the coccidiosis problem.

Unfortunately, there is *still* no such thing as a perfect coccidiostat. We don't have one . . . and neither does anyone else.

But here's a point worth noting: While many heralded coccidiostats have come and faded away, *nfz* and *bifuran* have continued in demand for replacement birds. In fact, use of these two products in replacement feeds is growing.

No registration headaches — One reason behind the increasing demand for *nfz* and *bifuran* is the fact that you can use either of these coccidiostats *without registration problems.* They are not new drugs and are cleared for use in combination with almost all commonly used additives.

But a more basic reason is found in a recent survey in which feed manufacturers were asked, "What do you look for primarily in evaluating a coccidiostat for replacement birds?" The survey shows *nfz and bifuran come closest to providing the benefits wanted.*

Considered by far the most important feature of a coccidiostat for replacement birds is the building of "lifetime immunity" . . . followed by the "safety" of the drug. *nfz* and *bifuran* deliver both of these major benefits . . . plus many additional features that distinguish them from other coccidiostats. Following is the complete *nfz* and *bifuran* protective package:

Lifetime immunity to coccidiosis by housing time... that's a "must" for replacement birds. Both *nfz* and *bifuran* allow lasting immunity development, the natural way—by permitting a mild, controlled infection during the growing period.

Safe, nontoxic — Neither *nfz* nor *bifuran* has harmful effects on internal egg quality, shell texture, hatchability or fertility. Unlike most other commonly used coccidiostats, *nfz* and *bifuran* can be safely fed to laying hens. Also, these two medications are nontoxic to livestock and pets.

Control outbreaks — You can raise the *nfz* or *bifuran* intake to the coccidiosis treatment level...safely... without bringing in another drug. This is not possible with some coccidiostats.

Antibacterial — In addition to aiding in the lifetime immunity process, *nfz* and *bifuran* knock out many secondary infections that can sap vitality, cause nonproductive runts and culls. They give you more than just coccidiosis protection.

Effective against pullorum — By increasing the *nfz* or *bifuran* level to 3 lbs. per ton of feed for 10 to 14 days, you can prevent mortality from pullorum. There's no need to come in with other drugs.

In the light of current registration headaches and confusion about coccidiostats, we wanted to remind you that perhaps *nfz* and *bifuran* can help solve problems for you. They are still doing the same effective job of controlling coccidiosis and allowing immunity they've always done.

For an *nfz-bifuran* reviewing session, get in touch with your Hess & Clark representative.

Effective against necro in pigs

While you have nfz or bifuran in your mill, here's another use for the same medication. nfz (at a level of 10 lbs. per ton of feed) and bifuran (at an 8-lb level) are effective, low-cost treatments for infectious necrotic enteritis in pigs. Self-fed to the entire herd for 5 to 7 days, these drugs prevent disease damage and allow the pigs to overcome the disease drag of necro.

HESS & CLARK
ASHLAND, OHIO
Division of Richardson-Merrell Inc.

NEW LOOK, but still the same dependable products — nfz and bifuran in their new 50-pound polyethylene-lined bags.

ZT-1-1

FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

States Relations Meeting In Washington

"Should feed label declarations of net energy and T.D.N. be permitted?"

This was one of the questions presented for discussion at this meeting. Total digestible nutrients (T.D.N.) is occasionally proposed as a means of describing a mixed feed. This is in addition to the customary guarantees for protein, fat and fiber. Everyone realizes the limitations of our present guarantees on feed labels. One cannot but sympathize with efforts to improve them.

At first glance, it seems like a good idea. Literally interpreted, this appears to combine the digestible factors supplied by each ingredient into a single statistic. This should enable direct comparisons between feeds and perhaps become another measure of quality. Such might be the conclusion of one having only a casual acquaintance with either T.D.N. or "net energy."

T.D.N. serves a useful purpose in helping nutritionists evaluate specific ingredients in relation to each other. To do this animals are carefully selected and fed under controlled conditions. Differences in the animals fed brought about by such things as age can vary the results. The quality of grains may vary in bushel weight or government grade.

T.D.N. is dependent upon the qualities of the ingredients and the nature of animals fed. Both of these must be exactly described if T.D.N. is to be meaningful. Resulting T.D.N. values are carefully evaluated and interpreted in relation to these factors.

Factors Vary

Anyone familiar with the feed business and with feeding knows these factors vary. Grain standards, for example, attempt to identify classes and grades, but even these are at best generalizations. It is well to carefully check each lot chemically before use even in manufacture of a mixed feed, much less use in carefully controlled experiments. In running feeding trials the researcher spends much time in selecting individuals for uniformity. This presents additional problems.

Ingredient factors vary so widely it is unrealistic to apply general T.D.N. values to each ingredient as would be required if applied to a mixed feed. In similar fashion, the animals fed cannot be expected to fit a given pattern. There is, therefore, no way to accurately calculate the T.D.N. in a mixed feed from the standpoint of ingredients used or the animals to be fed.

This is to suggest the inappropriateness of a guarantee for T.D.N. on a feed tag. In fact, T.D.N. is no better, if as good as, the terms now used. T.D.N. could be very misleading if much dependence were placed upon it and it is concluded that it is not a reliable measure of digestibility in a mixed feed.

Although the discussion at the States Relations Meeting did not cover all of the above points, these are some of the things we may be sure the committee had in mind in again reviewing this proposal.

Considered Before

I say "again" reviewing this proposal. This comes up about twice a year from somewhere, but it was a surprise to learn this is being seriously proposed by one or more feed manufacturers in the northeastern states. It is not unusual to have a group of feeders, representatives of a farm organization or a legislator propose that such guarantees be required, but to come from the feed manufacturing side of the picture is unusual.

What has been said with regard to T.D.N. applies also to the term "net energy." Those desiring a fuller discussion of both topics should consult any of the texts on animal nutrition. Morrison's "Feeds and Feeding" 22nd Edition has much to say on this as reference to Page 40 in this volume will reveal.

The joint committees of the American Feed Manufacturers Assn. and the Association of American Feed Control Officials known as "States Relations" review matters of this sort twice a year. They do not always come up with a written conclusion, preferring in some instances to report "No Recommendation." In this case, however, they recorded their conclusion as follows:

"The committee recommends that T.D.N. and net energy label declarations be prohibited unless satisfactory evidence is provided to the control official to substantiate the claim made."

the GHOSTLEY Pearl

BONUS layer of the 1959-60 Random Sample Tests!

In random sample test after test throughout the country, the Ghostley Pearl made a commendable showing. In 3 out of 8 major tests, the Pearl finished in the top quarter of the test. The other five tests, the Pearl was in the second quarter.

The all-important income over costs, the Pearl AVERAGED 28c MORE income per bird than the average of the tests. The Pearl produced 9 more eggs per bird than the average and she did it on one-fifth of a pound *less* feed per dozen eggs. And this was the FIRST year for the Pearl in random sample tests.

If you're not selling the BONUS layer, you'll find it's worth while investigating. In certain areas, some exclusive franchises are still available.

Write today for all information on a Ghostley franchise . . . where YOU run your own business. NO royalties. NO red tape. The Ghostley franchise program is a profitable plan with no kickbacks. Write us for full details.

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ONE-MAN OPERATION
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THE B&L MOBILE
BARNARD & LEAS Manufacturing Company INC.
CEDAR RAPIDS, IOWA

Study of Possible Health Hazards in Mills Under Way

IOWA CITY, IOWA—A pilot study to determine whether there are any potential health hazards to feed mill employees is now being conducted in Iowa by the division of occupational health of the U.S. Public Health Service, with assistance from the University of Iowa institute of agricultural medicine.

As previously announced, the government seeks to find whether hazards to employees exist in the handling of feed additives. (Feedstuffs, Oct. 15.) A study of feed mills in other parts of the country will be conducted later.

The Iowa study is one of many conducted in various industries over the past years by the Public Health Service, according to Dr. Roy Gibson, medical officer in charge in Iowa.

Dr. Clark Cooper, health service epidemiologist, emphasized that the study did not result from any reports of health damage to employees. Rather, he said, it is concerned with any possible health hazards that might arise in the future, and in the best ways to cope with such dangers.

"We have the full knowledge and cooperation of the trade association representing feed mills in the Midwest, the state health departments and the participating plants," he said.

Dr. Cooper said that a sample will be taken of mills in the country.

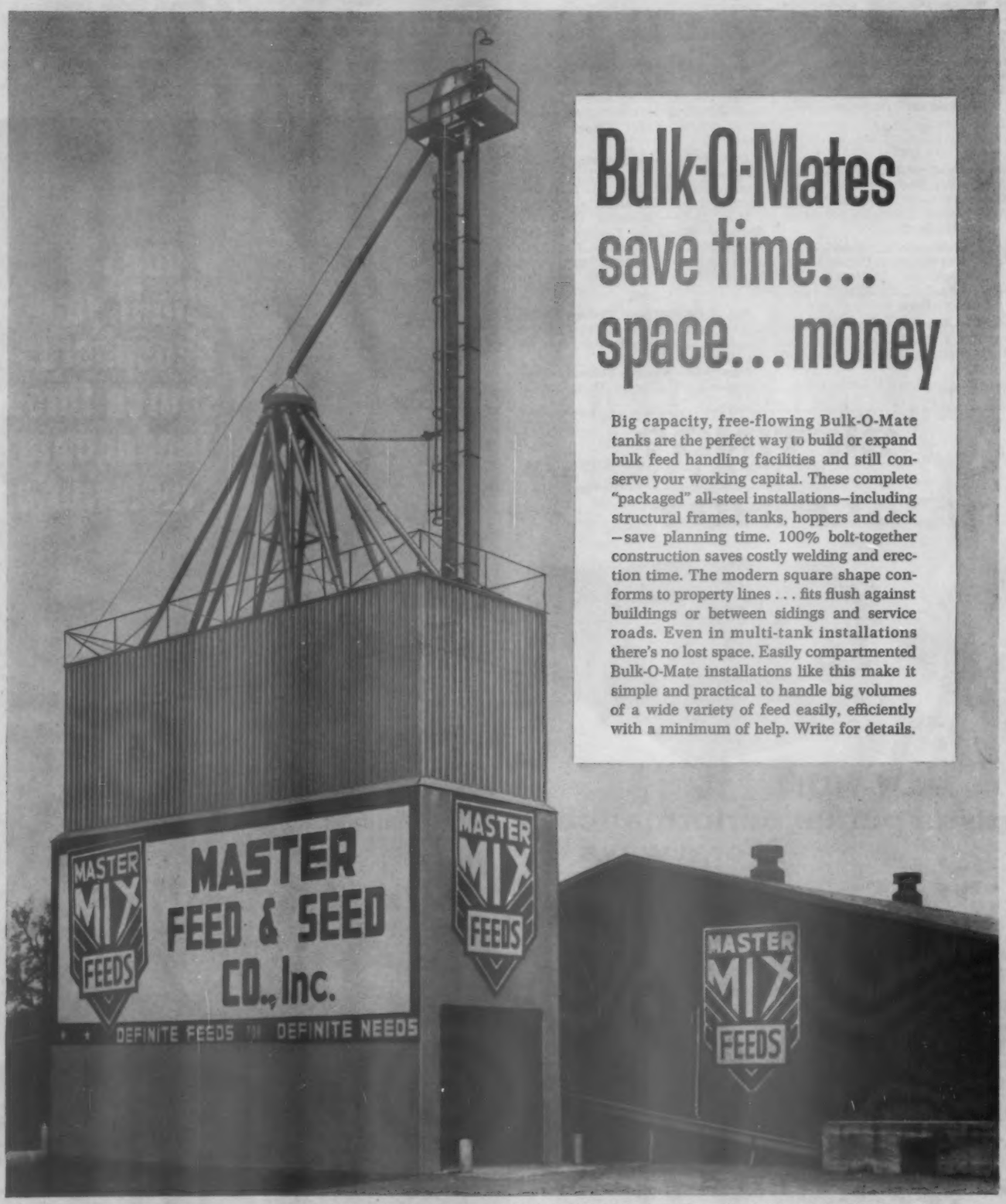
"We are not inspectors, and there are no federal laws applying to the handling of chemicals within these plants," he said. "Our aim is to help the feed industry and workers, and to give them information needed to handle safely the materials used in feed production."

At the conclusion of the study, a report will be made available to industry, representatives of state health departments and the general public. This report will not identify specific plants.

It is understood that employees will be given physical examinations, including chest x-rays, hair and urine analyses and skin tests.

On the basis of findings in the initial pilot studies, it is expected that officials will determine what might be done in the way of further studies.

Public health officials told feed men that they have no reason to think that mill hazards of the type being investigated exist, but they want to determine the facts as found in common mill operation practice.



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Master Feed & Seed Co., Inc. of Wisconsin — Bulk feed station at Madison, Wisconsin

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

1961

Jan. 4—California Egg Month Kick-off Luncheon; Statler-Hilton Hotel, Los Angeles; sec., California Egg Council, Willard Smith, 3304 N. Main Ave., Baldwin Park.

Jan. 5—California Egg Month Kick-off Luncheon; Sheraton-Palace Hotel, San Francisco; sec., California Egg Council, Willard Smith, 3304 N. Main Ave., Baldwin Park

Feb. 22—Kentucky Turkey Assn.; University of Kentucky, Lexington; J. E. Humphrey, poultry extension specialist.

April 22—Alabama Poultry Industry Promotion Dinner, Dinkler-Tutwiler Hotel, Birmingham, Ala.; sponsored by Alabama Poultry Industry Assn.; sec., W. L. Walsh, Box 567, Montgomery.

Dec. 13-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

Dec. 15-16 — Business Clinic for Elevator Managers; Kellogg Center, Michigan State University, East Lansing; Carleton C. Dennis, Department of Agricultural Economics.

1961

Jan. 4-6—National Turkey Federation; Conrad Hilton Hotel, Chicago, Ill.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10—Kansas Formula Feed Conference; Umberger Hall, Kansas State University, Manhattan; chm., Prof. T. B. Avery, Poultry Husbandry Dept., W. Waters Hall.

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 13-14—Florida State Poultry Producers Assn.; Cherry Plaza Hotel, Orlando, Fla.; chm., Wilfred D. Hedges, 227 Blossom Lane, Winter Park, Fla.

Jan. 15-17—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 23-25—Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.; for reservations: Atlanta Convention Bureau, Rhodes-Haverty Bldg., Atlanta.

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Jan. 31-Feb. 1—Illinois Agricultural Industries Forum; University of Illinois, Urbana; Department of Agricultural Economics, 305 Mumford Hall.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 1-2—Illinois Nutrition Conference; University of Illinois, Urbana;

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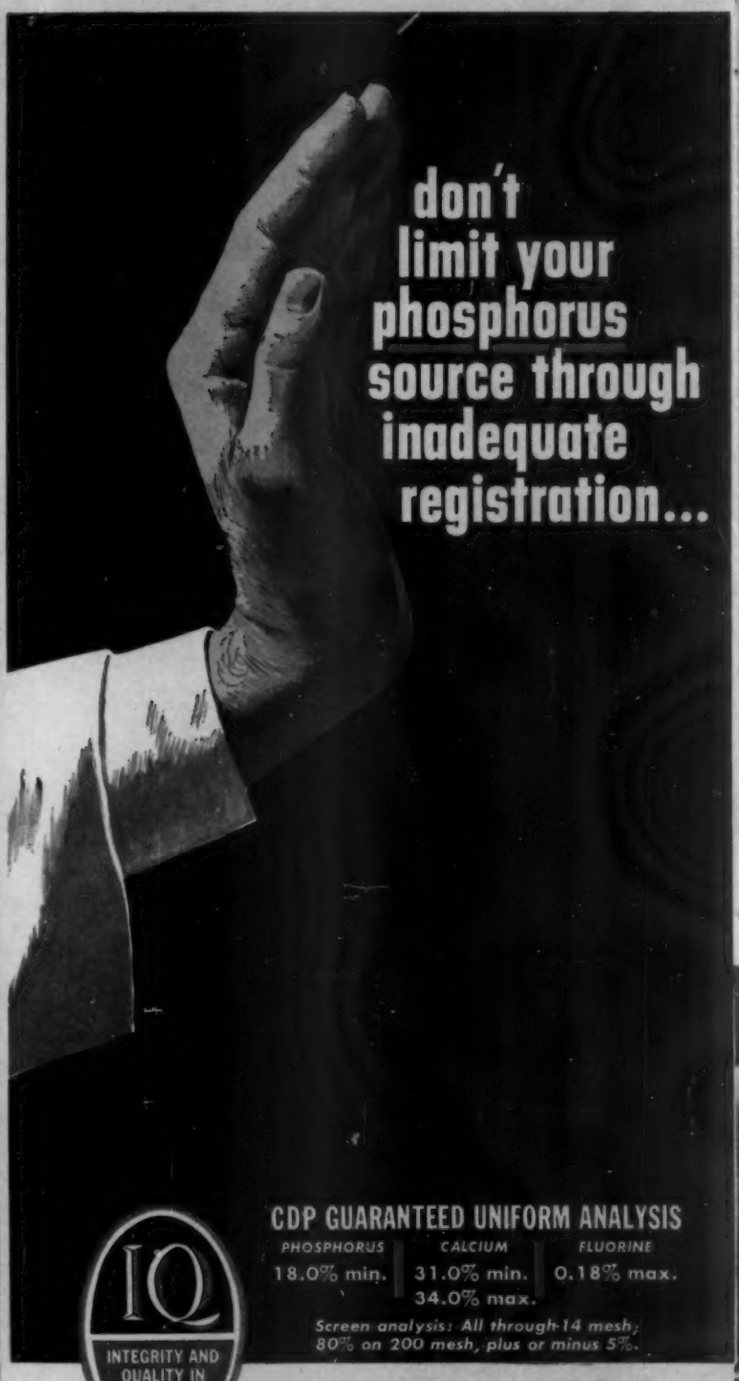

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chm., E. E. Hatfield, Department of Animal Science.

Feb. 1-2—New Hampshire Poultry Health Conference; Memorial Union Bldg., Durham; sponsored by Department of Poultry Science, University of New Hampshire; Prof. W. C. Skoglund, Poultry Science Dept.

Feb. 2—Beef Cattle Study Day; University of Arkansas Agricultural Experiment Station, Fayetteville.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 3-4—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., Roy Munson, 2200 University Ave., St. Paul, Minn.

Feb. 6-7—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 7-10—American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed Mill Production School; Hotel Leopold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10—Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 15—Turkey Short Course; University of Georgia, Athens.

Feb. 19-21—Midwest Feed Manufacturers Assn.; Hotel Muehlebach, Kansas City, Mo.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 19-21—Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

Feb. 22—Broiler Housing Symposium; University of Georgia, Athens.

Feb. 28-March 1—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke; sec., J. Paul Williams, Virginia State Feed Assn., 615 E. Franklin St., Richmond.

CALENDAR FOR 1960-61

DECEMBER

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March 8—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 8-9—Nebraska Grain & Feed Dealers Assn.; Sheraton-Fontenelle Hotel, Omaha; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

March 10-11—Oklahoma Feed Industry Conference and Workshop; Oklahoma State University, Stillwa-

(Turn to page 76)

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The AAFCO definition states: "Defluorinated phosphate includes either calcined, fused or precipitated calcium phosphate. It shall contain not more than one part of fluorine (F) to 100 parts of phosphorus (P). The minimum percentage of calcium (Ca) and phosphorus (P) and the maximum percentage of fluorine (F) shall be stated on the label. The term 'Defluorinated' shall not be used as a part of the name of any product containing more than one part of fluorine (F) to 100 parts of phosphorus (P)."

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Louisville: 111 South Hubbard's Lane, TWinbrook 5-5456
Minneapolis: 2429 University Ave., S. E., FEderal 2-7311
New Orleans: 708 Maritime Bldg., JAckson 2-0521
New York: 420 Lexington Avenue, OXford 7-0700
Philadelphia: One Bala Ave., Bala Cynwyd, Pa. MOhawk 4-5110
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NOW...FROM THE LEADER IN COCCIDIOSIS RESEARCH

Carefully selected from a massive screening program involving thousands of compounds, AMPROL combines a highly desirable balance of efficacy and safety. It shows promise of being a truly effective coccidiostat for use in broiler feeds. This latest addition to the Merck family of coccidiostats is really new and has undergone intensive study and testing, using the most advanced methods. It is the first coccidiostat evaluated against seven species of chicken coccidia.

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The chemical structure of AMPROL differs completely from that of any other coccidiostat—it is similar to that of thiamine. At recommended use levels, AMPROL appears to interfere with the thiamine metabolism of the coccidia, but does not affect the normal thiamine metabolism of the chicken. This mode of action is entirely different from that of any other coccidiostat in the industry's history.

SIGNIFICANT COMMERCIAL ADVANTAGES

The value of AMPROL can be measured by its efficacy and its favorable margin of safety . . . plus the fact that it permits attractive weight gains and feed conversions. What's more important, tests to date have not shown any significant ability of coccidia to develop resistance to this compound—an indication of a most promising role for AMPROL—in the management of coccidiosis—for years to come.

EFFICACY

AMPROL exhibits important activity against the most significant coccidia—especially *Eimeria tenella* and *E. necatrix*. Carefully checked against *44 strains of seven coccidial species*, AMPROL has demonstrated a favorable pattern of performance under a variety of conditions.

And in laboratory comparisons with *mixed* infections of cecal and intestinal coccidiosis (*E. tenella, E. necatrix, E. acervulina* and *E. maxima*), AMPROL *gave more protection than other coccidiostats.*

PRODUCTION PERFORMANCE

AMPROL has permitted excellent growth and feed efficiency. Results of a year of experiments under practical, commercial-type conditions have substantiated the laboratory findings.

Compared with controls, broilers on AMPROL showed higher final weights, with favorable feed conversions.

CONSISTENT PERFORMANCE

In the tests, birds were exposed to four consecutive generations of ten virulent strains of *E. tenella*. This "killer" coccidial species did not develop significant resistance to AMPROL. Based on these and subsequent tests, it is anticipated that AMPROL will give consistently good protection under most field conditions.

SAFETY

AMPROL is well tolerated up to four times its suggested use level of 0.0125%. Side effects noted above a 0.05% level are specifically related to thiamine-depletion, and are quickly reversible by giving thiamine. This simple corrective procedure is unique with AMPROL.

Layer and breeder feeding trials indicate that recommended use levels of AMPROL will not affect egg quality, egg production or hatchability.

No toxicity is observed when feeds containing AMPROL are fed to cattle, sheep, swine and dogs.

USE LEVELS

The recommended use level for most field conditions is 0.0125%; where adverse conditions and less sensitive strains of coccidia prevail, the 0.025% level should be employed.

FURTHER INFORMATION

Reference data on the use of AMPROL in broiler feeds are available in a technical service bulletin.

For more details, or to place your initial order, contact your Merck representative or write to Agricultural Products, Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

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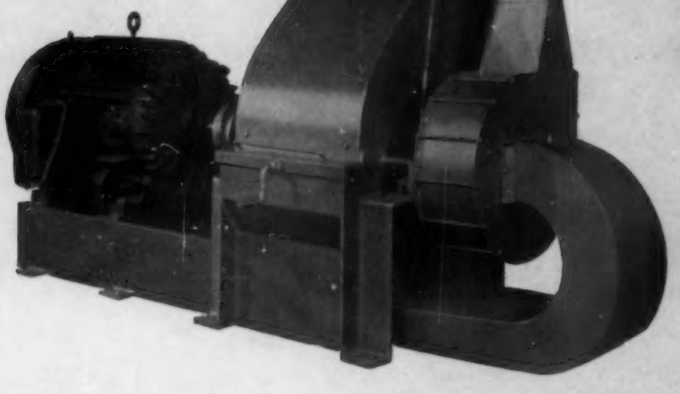

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LESS POWER CONSUMED: Exceptionally high capacity per horsepower applied. Instant screen change while mill is running avoids overloading circuits.

DOES MORE IN LESS TIME through large capacity and time-saving features of instant screen change.

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SPACE-SAVING COMPACTNESS: Completely self-contained. Both crusher-feeder and hopper can be permanently mounted, permitting location of mill close to wall or in a tight corner.

VERSATILE: Extra high throat and large feed opening assure efficient handling of bulky materials as well as small grains.

SAFER: No exposure to moving parts while changing screens.

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ter; chm., Dr. Rollin Thayer, Poultry Science Dept.

March 15—Commercial Egg Production Short Course; University of Georgia, Athens.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

April 3-4—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 9-13—American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; sec., Carl E. Nall, 1304 7th St., Los Angeles 21, Cal.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas city 10, Mo.

July 24-25—Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 23-25—Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

1962

Aug. 13-18—13th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

FILE FOR INCORPORATION

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Everything We've Said About Nichols 108's For Over Four Years:

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"The cleanest dressing white cross broilers ever produced."

Broiler Industry — Aug. 1957

"Because the 108 is a multiple cross produced from synthetic strains developed exclusively by Nichols, it has exceptional disease resistance. It is brim full of vitality which means more eggs and better eggs with high hatchability."

The Poultryman — Sept. 6, 1957

"Crossbred chicks have proved that they are healthier and grow faster than pure strains. Crosses produced by Nichols 108s are doubly fortified because the 108s are multiple crosses to intensify the extra health factor in the broiler chicks."

American Egg & Poultry — Feb. 1958

"Broilers based on Nichols 108s produce more pounds of meat per house, lead in percent of salable yield, dress cleanly and are ready made for government inspection."

Poultry Processing & Marketing — Aug. 1958

"No other birds top broilers based on Nichols 108s under commercial conditions."

Broiler Industry — Oct. 1958

"Processors can realize ½ to 1% greater yield from broilers with Nichols 108 mothers."

Georgia Poultry Times — May 19, 1958

"In at least 3 out of every 4 split house tests, under commercial conditions, broilers based on Nichols 108s will lead in growth and feed efficiency."

Broiler Business — June 1959

"Any way you figure it, you simply cannot match Nichols 108s for over-all profits at the commercial, industry level."

Feedstuffs — Nov. 14, 1959

"In 1960 Maine, Maryland and California tests, broilers based on Nichols 108 females have taken first place in weight and dollar returns."

American Hatchery News — July 1960

"No other birds which compete at the grow-out level even come close to Nichols 108s in egg production and hatchability."

Broiler Business — Aug. 1960

AND THE 108's ARE BETTER THAN EVER TODAY!

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Skowhegan, Me. • Tenaha, Tex. • Concord, N. C. • Albertville, Ala. • Blairsville, Ga. • Aprilia, Italy

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No. 7215—Turkey Disease Bulletin

A bulletin for feed manufacturers dealing with prevention of coccidiosis and hexamitiasis in turkeys has been announced by Dr. Salsbury's Laboratories.

The company says that its Tinostat is a highly effective product to prevent both coccidiosis and hexamitiasis in turkeys, and the bulletin provides detailed information about the product, including data to support claims of safety and effectiveness.

Company officials say that Tinostat needs to be given only as long as turkeys receive the starting ration. By the time the birds reach 10-12 weeks of age, they generally have acquired natural immunity to both coccidiosis and hexamitiasis. For copies, check No. 7215 on the coupon and mail.

No. 7219—Pox Vaccine Bulletin

The American Scientific Laboratories, Inc., announced that it now has available a report on the development of what it describes as an unusually mild pox vaccine (Pipovax) with high immunizing ability for all pox vaccinations of chickens and turkeys.

The report, which presents experimental data in a nontechnical format, shows how Pipovax was first developed; that it immunized several species of fowl, but was classed as a pigeon type of pox virus; that Pipovax was not only safe to use, but provided protection for at least 32 weeks when chicks were vaccinated at a day of age; that birds vaccinated with Pipovax at six and one half weeks of age remained immune for at least 68 days and many other interesting facts leading to its development. For copies, check No. 7219 on coupon and mail.

No. 7223—Safety Training Course

An effective, low-cost safety training course for industrial foremen has been developed by the National Safety Council. The course consists of a series of six text booklets entitled "Men and Motives in Safety Supervision," and a manual for discussion-group leaders.

Each booklet is for a one-hour training session for foremen. The leaders' manual tells how to set up meetings and apply the material to individual plant situations. The course offers practical instruction on ways a foreman can better understand his men and work with them toward safer, more efficient work practices. For additional information, check No. 7223 on coupon and mail.

No. 7220—Rodenticide

A new rodenticide (called Ferret) has been developed by the Ferret Laboratories. The company says it affords perpetual 100% control for a full year or longer and that it is a continuous lure with the stability to stay effective indefinitely.

The success of this new rodenticide, the company claims, is based on the rat and mouse desire to steal—they carry off small, plastic-sealed bags of the rodenticide which is always fresh and ready for effective use when ripped open.

And along this line of thinking, the manufacturers have developed a "packaged unit" of Ferret. The package is a cardboard carton 16 in. x 6 in. x 14 in. packed with 6 lb. of Ferret. The carton is divided inside into a runway and a storage space for cellophane sacks of Ferret. On either end of the carton are die-cut doors.

The company claims that farmers and seed and grain dealers throughout the Midwest have had unusually good results with Ferret. For additional information, check No. 7220 on coupon and mail.

No. 7216—Bag Closure Tape

The West Virginia Pulp & Paper Co. announces the development of a four-ply kraft tape closure called ImpacTape, which is said to double the impact resistance of sewn-end multiwall bags.

Company officials say the new closure tape minimizes bag breakage at the sewing line, which accounts for 70% of all sewn multiwall bag failures.

The ImpacTape closure consists of a piece of kraft tape, the edges of which have been folded under the sewing line with the needle passing

through four layers of the tape, instead of two layers as in the conventional closure.

The double-duty sewn tape provides a minimum of twice the impact resistance of standard sewn closures. In addition to the strength imparted by the four sewn tape plies, the inward fold of the tape further cushions the sewing line against sudden shock. For additional information, check No. 7216 on the coupon and mail.

No. 7217—Enclosed Vibrating Conveyor

The Cleveland Vibrator Co. announces a new totally enclosed air-powered vibrating conveyor that eliminates contamination and dust when moving bulk materials.

A vibratory drive, air-cushioned for quiet operation, powers the aluminum tubular conveyor which carries the material. The entire unit can be cleaned with common cleaning substances without damage to the conveyor or vibratory unit. Flow is started and stopped by a quick acting valve that can be regulated by

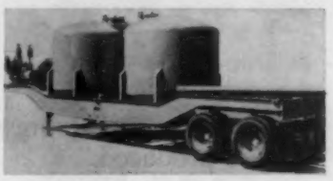
adjusting the air supply pressure. Four coil springs provide support and isolate vibration from surrounding structures.

The model pictured here carries aluminum pellets with a density of 65 lb. per cu. ft. from a bin to a blower system at a rate of 20 tons an hour. For additional information, check No. 7217 on the coupon and mail.

No. 7221—Bulk Pneumatic Trailer

A new twin-tank dry bulk materials trailer equipped for self unloading by air has been introduced by the Heil Co. Because of a new pneumatic principle, the trailer unloads twice as fast as conventional units, up to 4,000 lb. per minute through a 4-in. pipe, the company says.

The new principle involves the use



of high pressure with low air volume. This makes the material flow through the unloading pipe in a "hi-density" condition.

Featuring light weight and simplicity design, the clean bore vessels of this new development discharge materials cleanly and completely. They are quick and easily cleaned between product changes.

The trailer is not confined to powdered materials, but will also haul granular products such as sugar, plastics, chemicals, feed, etc. For additional information, check No. 7221 on the coupon and mail.

No. 7218—Poultry Breeding Bulletin

Genetic techniques used in scientific poultry breeding are explained in a new 16-page booklet produced by the Indiana Farm Bureau Cooperative Assn.

The booklet, a story of how chicks are bred to increase their earning capacity, presents explanations through text, photographs and diagrams. The basic research of land grant colleges and experimental stations is summarized. For copies, check No. 7218 on the coupon and mail.

No. 7222—Dry Form of Antioxidant

A new dry form of Santoquin brand antioxidant for poultry feeds and dehydrated forage, developed to provide handling and blending advantages for formulators, is being marketed by Monsanto Chemical Co.

Specifically suited for feed mill mixing operations, the antioxidant's dry, free-flowing form permits thorough dispersion of the material throughout feed formulations, the company states. Six ounces of the compound is sufficient to treat a ton of feed.

Company officials say the antioxidant preserves the feed's nutritive value and assures that nutrients are metabolized by the bird rather than lost in passage through the digestive system.

Mixture Six of the new antioxidant is commercially available in 100 lb.

Send me information on the items marked:

- ☐ No. 7215—Turkey Disease Bulletin
- ☐ No. 7216—Bag Closure Tape
- ☐ No. 7217—Enclosed Vibrating Conveyor
- ☐ No. 7218—Poultry Breeding Bulletin
- ☐ No. 7219—Pox Vaccine Bulletin
- ☐ No. 7220—Rodenticide
- ☐ No. 7221—Bulk Pneumatic Trailer
- ☐ No. 7222—Dry Form of Antioxidant
- ☐ No. 7223—Safety Training Course

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

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Reader Service Dept. Minneapolis 40, Minn.

leverpaks specially lined to retain product quality in shipping and storage. The new compound consists of 66.6% active material on a dry carrier. For additional information, check No. 7222 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7149—Bulk feed body, Henderson Manufacturing Co.

No. 7150 — Collapsible container, Highway Trailer Industries, Inc.

No. 7151—Portable feed bin, Blosser Manufacturing Co.

No. 7152—Protein analysis report, North Dakota Agricultural College.

No. 7153—Explosion protection system, Fenwal, Inc.

No. 7154—Feed ingredient analysis table, Stabilized Vitamins, Inc.

No. 7155 — Cob conveyor, Shelby Manufacturing Co.

No. 7156 — Broiler feeder, James Mfg. Co.

No. 7157—Bin vibrator, Eriez Manufacturing Co.

No. 7158—Poultry bags, Anderson Box Co.

No. 7159—Electronic control brochure, The Electronics Control Division of Flo-Tronics, Inc.

No. 7160—Bulk feed body, Winger Manufacturing Co.

No. 7161—Counter display units, Hess & Clark.

No. 7162—Grain trailer with belt conveyor, The Wilson Trailer Co.

No. 7163—Roll-to-back nest, Keen Manufacturing Corp.

No. 7164—5-ton vertical mixer, Jacobson Machine Works.

No. 7165 — Storage tank heating coils, Dean Products, Inc.

No. 7166 — Water-dispersible vitamins, Merck & Co., Inc.

No. 7167 — Hopper-level control, James Manufacturing Co.

No. 7168—Fork truck attachment, Clark Equipment Co.

No. 7169 — Intermediate range checkweigher, Toledo Scale Corp.

No. 7170—Valve bag packer, St. Regis Paper Co.

No. 7171—Sewing pedestal, Richardson Scale Co.

No. 7172—New coccidiostat, Merck & Co., Inc.

No. 7173—Grain storage equipment, Walsh Manufacturing Co.

No. 7174—Auger molasses mixer, Pacific Molasses Co.

No. 7175—Grain dryer, Figley Cox, Inc.

No. 7176—Auto advertising device, Travelads, Inc.

No. 7177—Gravity powered grain spreader, Habco Manufacturing Co.

No. 7178—Motion safety switch, Fuller Co.

No. 7179—Processing equipment catalog, Edw. Renneburg & Sons Co.

No. 7180—Feed analysis ingredient table, Stabilized Vitamins, Inc.

No. 7181—Pelleting data sheets, Baroid Chemicals, Inc.

No. 7182—Grate magnet brochure, Eriez Manufacturing Co.

No. 7183—Screw conveyor bulletin, Sprout, Waldron & Co., Inc.

No. 7184—Fat, oil applicator, Lingel Fat & Oil Applicator Co.

No. 7185—Gravity feeder, Thayer Scale Corp.

No. 7186—Egg producing program, Hess & Clark.

No. 7187—Rolling mill attachment, Barnard & Leas Manufacturing Co., Inc.

No. 7188—Expansion program, Sweet Manufacturing Co.

No. 7190 — Expanded hammermill line, Seco, Inc.

No. 7191—Grain cleaning machine, Ross Manufacturing & Sales Co.

No. 7192 — Vaccine administering method, Dorn & Mitchell Laboratories, Inc.

No. 7193 — Mold control bulletin, Monsanto Chemical Co.

No. 7194 — Detector catalog, Flo-Tronics, Inc.

No. 7195 — Hopper railroad car, Kurth Malting Co. and Pullman Standard.

No. 7196—Revolver feeder bulletin, Fuller Co.

No. 7197—New package size, Chas. Pfizer & Co., Inc.

No. 7198 — Hopper scale bulletin, Richardson Scale Co.

No. 7199—Molasses in silage described, Pacific Molasses Co.

No. 7200 — Hog feeding system, Brower Manufacturing Co.

No. 7201—Poultry vaccine catalog, Associated Laboratories, Inc.

No. 7202 — Egg cleaning machine, National Ideal Co.

No. 7203—Drive unit, The Lima Electric Motor Co.

No. 7204—Mixer bulletin, Sprout, Waldron & Co., Inc.

No. 7205—Range block press, A. E. Johnson & Sons

No. 7206—Sewing head, Union Special Machine Co.

No. 7207 — Poultry medications, Vineland Poultry Laboratories

No. 7208—Bird repellent, Seedburo Equipment Co.

No. 7209 — No-Spill Device, The Frank G. Hough Co.

No. 7210 — Combination bag, Raymond Bag Corp.

No. 7211—Grain roller mill, Roskamp Huller Manufacturing Co., Inc.

No. 7212—Dog food flavor, Flavor Corporation of America.

No. 7213 — Mineral mixes, Corn King Co.

No. 7214—Bulk truck, Productive Acres Mfg. Co.

Merrill Gates Heads Mutual Millers Assn.

JAMESTOWN, N.Y. — Merrill Gates of the Randolph Feed & Supply Co., East Randolph, N.Y., was elected president of the Mutual Millers & Feed Dealers' Assn. at a recent directors meeting.

Ralph Mosher, Harry Austin Milling Co., South Dayton, N.Y., was elected vice president of the association and Virginia C. Mattison, Cattaraugus, N.Y., was elected secretary-treasurer.

Welcomed as a new director was Harry Koerselman, Meyerink Milling Co., Clymer, N.Y. He fills the unexpired term of George Edmunds, Sherman, N.Y.

The association's mid-winter meeting has been scheduled for Wednesday, March 8, at the Statler-Hilton Hotel in Buffalo, N.Y.

SOLVE YOUR CUSTOMERS' STORAGE PROBLEMS... AND GET BIGGER VOLUME BULK FEED SALES AND PROFITS

SELL BROWER *Kleen-Feed* CATTLE FEEDERS

Now in two sizes: 15 ft. feeder has 250 bushel capacity . . . 7½ ft. feeder has 125 bushel capacity.

- BIG CAPACITY—Fill Only Once a Week
- Serve More Customers in Less Time . . . Lower Delivery Overhead . . . Increase Sales Volume.
- Feed Stays Fresh, Clean, More Palatable — Cattle Eat More.

Now . . . an exciting new self feeder for cattle that's a cinch to sell! Solves your customers bulk feed storage problems . . . you also make more profit through bigger volume sales to your bulk customers; lower your overhead costs; provide more efficient customer service. Two sizes to meet the needs of large and small herds. The large size feeds 100 cattle for a week on one filling; the 7½ ft. feeder does it for 50 head. Special hopper and trough design keeps feed clean, fresh, palatable. Cattle eat more; make faster, more profitable gains.

Specifically designed for bulk feed set-ups. Built to give 15 to 20 years of service with heavy rust-resisting steel . . . ruggedly braced throughout.

Feed available around the clock. Cattle keep busy at the trough all through the day. Even timid animals have their chance at fresh feed that hasn't been worked over.

BROWER—World's Largest Line of Livestock and Poultry Equipment. Mail coupon below for free circulars. Check items in which you are interested.

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a complete line of packaged premixes by
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Report Research on Feeds Stimulating Growth for Rumen

WOOSTER, OHIO—Five different steer feeding experiments and three lamb feeding experiments have been carried out at the Ohio Agricultural Experiment Station here to evaluate the supplements previously shown to stimulate the activity of the rumen microflora in vitro.

Conducting the experiments were: Dr. Orville G. Bentley, formerly of Ohio and now of South Dakota State College of Agriculture, and Dr. Ronald R. Johnson, Dr. E. W. Klosterman, Dr. J. H. Cline and Dr. A. L. Moxon, all of Ohio

A supplement composed of valeric acid, biotin and para-amino-benzoic acid (PABA) gave only a slight increase in gain in three of these experiments while in the remainder no benefit was obtained. When this same supplement was added to a purified-type lamb ration, digestibility coefficients were not improved but feed intake was significantly increased. It is concluded that feeding 0.5 gm. per day of valeric acid to a steer receiving a high corn ration will not improve the efficiency of feed conversion and the rate of gain of the animal. A similar conclusion was reached for lamb rations containing 10 gm. of valeric acid per 100 lb.

The studies show no indication that the addition of biotin or PABA gave a beneficial effect on animal performance.

Growth Improved

Alfalfa meal when added to fattening rations for steers improved the rate of gain. The forage used was of low quality (corn cobs or mature timothy hay) but the ration was adequately supplemented with minerals, vitamins A and D and protein and the steers were either fed diethylstilbestrol or pellets of the hormone were implanted under the skin. This would suggest that the alfalfa meal improves growth by a mechanism not now understood, the researchers report.

Hot water extraction of alfalfa meal did not yield a fraction as active as the meal itself but this approach to the identification of a factor in alfalfa meal needs more study before a definite conclusion can be made.

When properly supplemented, good performance can be obtained with steers and lambs fed rations formulated to include poor quality timothy hay or corn cobs, it is reported.

Feeding a good ration adequate in protein, either from natural sources or non-protein nitrogen, energy from grains or forage and pasture, and adequate minerals should provide the proper amounts of nutrients to support good microbial growth and activity in the rumen, the researchers concluded.

Urges Cooperation of Extension, Feed Men

ST. PAUL—Feed men and extension personnel were urged to work together for the good of the farmer at a recent Twin City Nutrition Seminar held on the farm campus of the University of Minnesota here.

Ralph Wayne, extension dairy husbandman at the university, urged the cooperation, saying that many times feed men and extension personnel appear to be at odds while working for the farmer.

Dr. Elton Johnson of the University of Minnesota poultry department discussed problems of the egg industry, stating that quality is the main problem. He commented on the number of eggs attaining grade A quality and the number maintaining that quality when reaching distant markets.

Dr. Johnson said that the day may come when the egg marketing situation will be similar to that on milk and nothing but grade A will be marketed.

There is no real solution yet to the shell quality problem despite research on calcium and vitamin A in poultry diets, Dr. Johnson said. He emphasized the need for improved interior quality and efficiency in production of a dozen eggs.

He said that CRD remains a big problem in broiler and turkey production. Dr. Johnson also commented that condemnations are taking the cream off the top of turkey production profits.

Dr. Ray Arthaud, animal husbandry department, commenting on beef production, said, "We don't see how you can afford not to feed stilbestrol." He also stated that there is considerable interest in vitamin A, protein levels, silage rations and use of urea. Dr. Arthaud indicated that there is considerable interest in feedlot mechanization.

Dr. Arthaud said that the main areas of interest in swine now include: confinement systems, manure disposal, disease problems and increased use of testing. He said that many swine raisers are overfeeding their sows volume-wise but underfeeding them nutritionally.

Regarding sheep, Dr. Arthaud said that many ewes are being underfed at breeding time. He also said that many sheep raisers make needlessly long hours of work for themselves by spreading out lambing over too long a period of time.

Dairy Testing

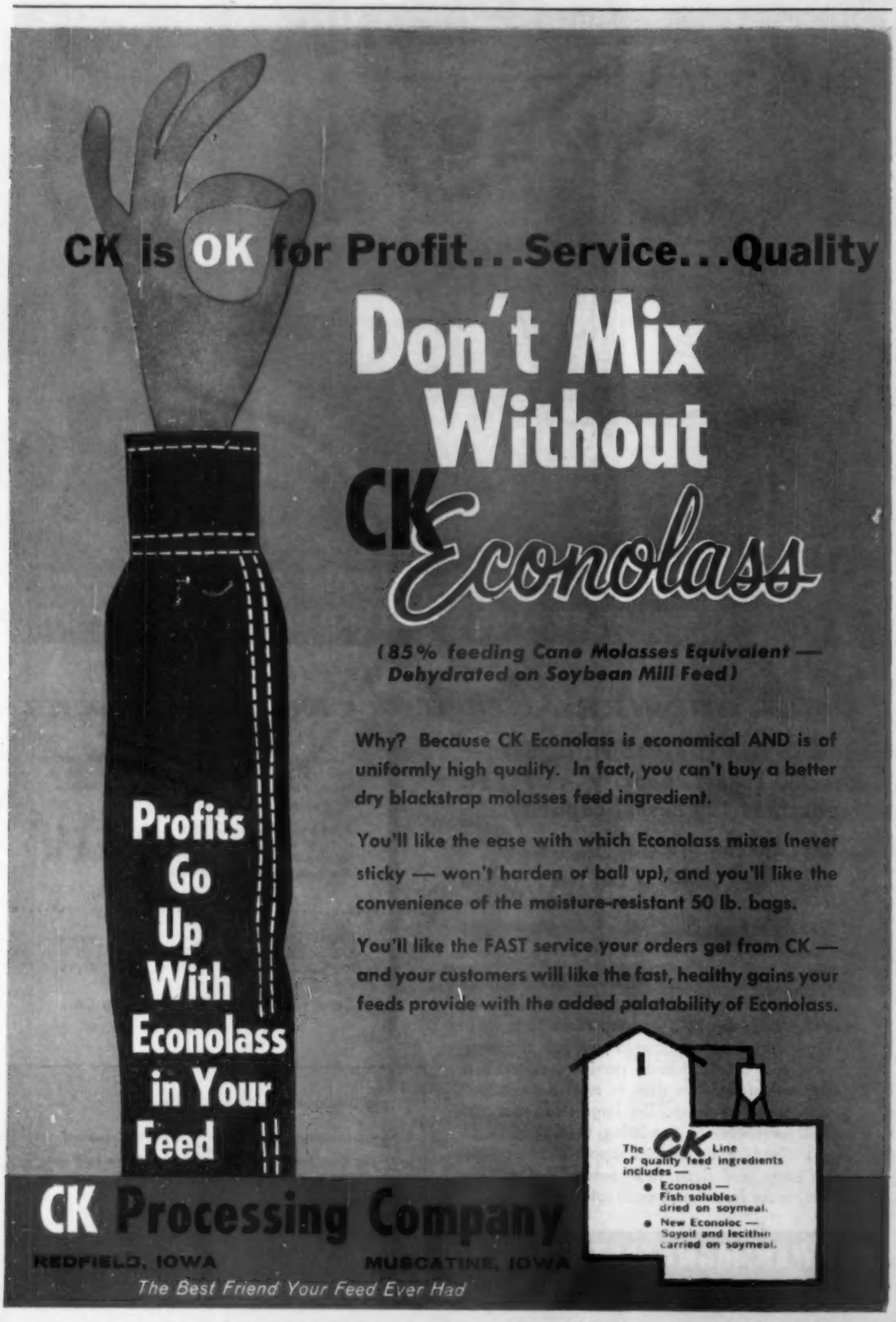
Mr. Wayne said the biggest problem of the dairyman is finding out where he is going. He stated that just 10% of Minnesota's dairy production is tested. In 1959, the average cow produced 267 lb. butterfat.

On that basis, he said that the profit, above feed and an allowance of $80 per cow for miscellaneous expense, for each cow is $44, giving the farmer 44¢ per hour for his time estimated at 100 hours.

He said that a cow producing 175 lb. would net no profit for a year. Testing programs are available at as low as 25¢ per cow per year and would help dairymen in culling non-profitable cows from the herds, Mr. Wayne said.

The extension dairyman said that a revolution is here in dairying. He commented that the result will be fewer herds, some poor producers getting out of the business and increased profits for the dairymen left in the business.

Chairman for the seminar was Dr. R. J. Meade.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Why? Because CK Econolass is economical AND is of uniformly high quality. In fact, you can't buy a better dry blackstrap molasses feed ingredient.
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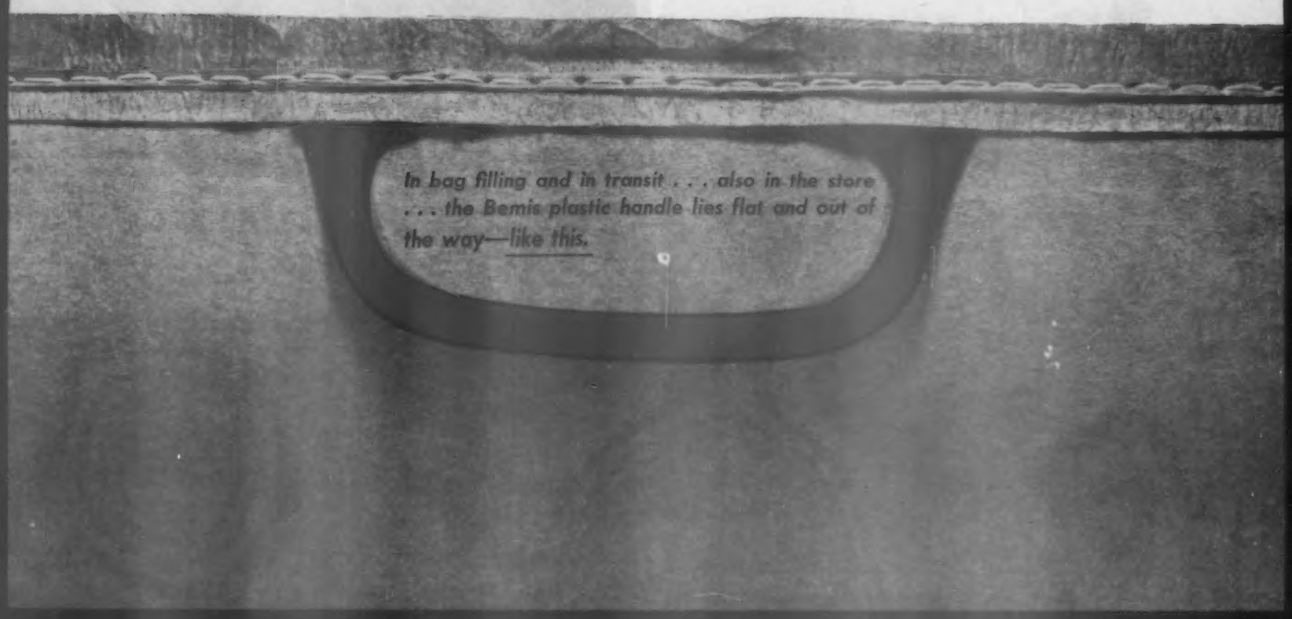
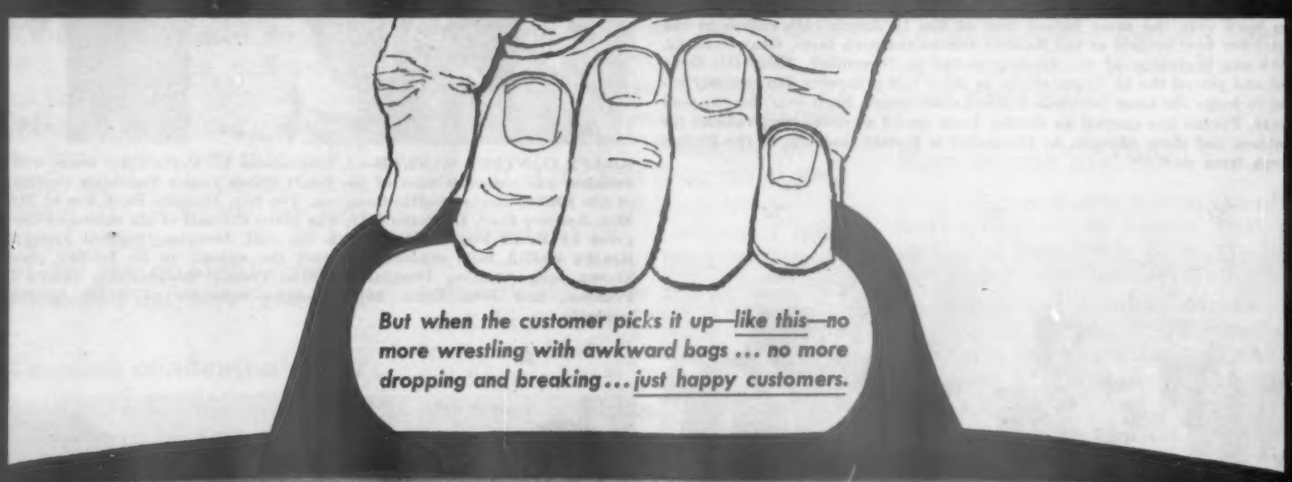
ANNOUNCING . . . THE FIRST COMPLETELY SATISFACTORY HANDLE FOR MULTIWALL BAGS!




But when the customer picks it up—like this—no more wrestling with awkward bags . . . no more dropping and breaking . . . just happy customers.

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A major merchandising advance! Look at these benefits: Won't break • Won't pull loose • Molded to fit the hand comfortably • Easy to carry • Available in 4 colors—red, black, green, yellow • Enhances the appearance of your package.

Bemis Handle Bags are ideal sales-building packages for dog food, rock salt, fertilizer . . . actually, just about anything you would package in bags up to 25- or 30-lb. capacity.

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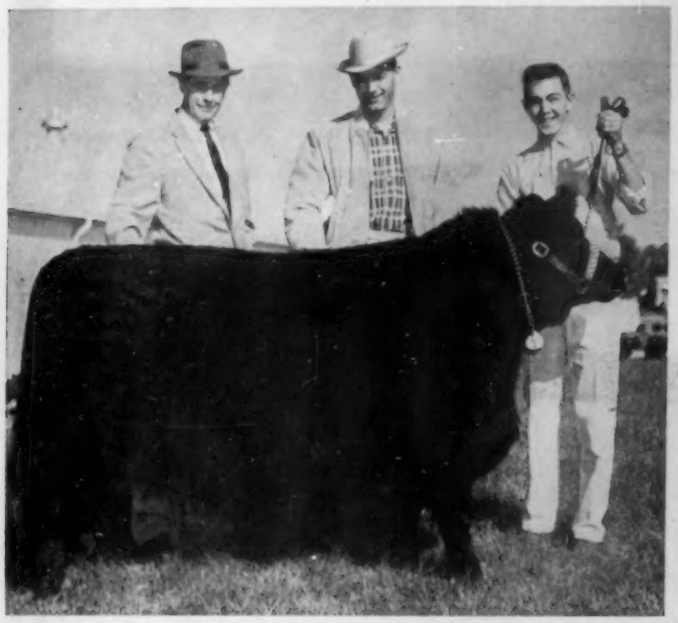

JUDGED BEST—Dr. A. J. Dyer, left, chairman of the animal husbandry department, University of Missouri, and Dr. J. L. Williamson, center, manager of beef cattle and sheep research for the Ralston Purina Co., St. Louis, are shown here with the steer judged best of the 18 Angus club calves in the Purina baby beef project at the Ralston Purina research farm, Gray Summit, Mo. At the beginning of the feeding period in November, 1959, Dr. Dyer judged and placed the 18 Angus steers as show calf prospects. He recently returned to judge the same calves as finished show steers. Each year, for the past 14 years, Purina has carried on similar tests aimed at developing rations for club steers and show animals. At the halter is Ronald Goodwin of the Purina research farm staff.

☆ ☆ ☆

PRIZE WINNER—Six registered heifers were awarded to grand prize winners in the recent Albers Milling Co. "Fun on the Farm" photo contest, it was announced by the feed company. Here, Patricia Ann Antler, Zionsville, Pa., is shown with the Angus heifer she won. Making the presentation is Hoyer Shindler, right, representative of Albers. Pleased over his daughter's winning the prize is Charles Antler. The national contest was judged on the livestock photos submitted by users of Albers products which best depicted the "Fun on the Farm" theme.

CONTEST WINNER—James Tracy (center), Honegger district manager, Humboldt, Tenn., won a crisp new $50 for first place in what might be termed a "sell-down" contest held at the last general sales meeting of Honeggers' & Co., Fairbury, Ill. Mr. Tracy is pictured here with Sam R. Honegger, left, and Frank E. Honegger, chairman and vice chairman of the board, respectively, who acted as final judges in the contest. The complete Honegger field sales force participated in the contest; points counting in the contest were originality of presentation, sincerity, enthusiasm, ideas and adaptability of all sales tools used in the presentation. Robert Slayton, general sales manager, said he believes that educationally and idea-wise this was one of the best programs the company has outlined for quite some time.

☆ ☆ ☆

KRAFT CONTEST WINNER—A 12-year-old La Porte City, Iowa, 4-H club member was named winner of the Kraft Foods Junior Exhibitor contest held at the 1960 Waterloo Cattle Congress. The boy, Douglas Buol, son of Mr. and Mrs. Andrew Buol, La Porte City, was given the calf of his choice at the Congress by Kraft Foods. Along with the calf, Douglas received a supply of Kraft's Kaff-A milk replacer to start the animal on its feeding program. Shown congratulating Douglas are Miss Bonnie Houghtaling, Iowa's Dairy Princess, and John Zima, national sales manager of Kraft agricultural products.

☆ ☆ ☆

SCIENTISTS CONFER—French scientist Dr. Henri Simmonet (center) visits with two American researchers at the Second International Animal Feed Symposium in Madrid, Spain. Left to right are Dr. H. G. Luther, scientific director of animal health and nutrition for Chas. Pfizer & Co., Inc.; Dr. Simmonet, professor at the National School of Veterinary Medicine in Paris, and Dr. E. P. Singsen, head of the department of Poultry Science, University of Connecticut. Jointly sponsoring the conference were the Soybean Council of America and the U.S. Feed Grains Council in conjunction with the Foreign Agricultural Service of the U.S. Department of Agriculture.

WORRIED

about CRD, synovitis, condemnations?

You can reduce broiler condemnation risk

What is a reasonable condemnation rate? To find out, the University of Maryland and the University of Delaware studied 61 flocks (nearly one million birds) from hatchery to processing line.

Only about one-fifth of these flocks had less than 1% condemnations! Two-fifths had 2% rejects or less. On the other hand, one-third of the flock owners had more than 4% of their birds turned down . . . and 10% losses were suffered in 13% of the flocks!

Condemned birds were valued at 60¢. On this basis, a loss rate of 5% costs $600 for every 20,000 birds marketed . . . or $2,400 for four 20,000-bird batches.

What can you do about condemnation losses? First, let's review . . .

What causes condemnations?

Many factors can influence reject rate to some extent. But a University of Delaware scientist says "chronic respiratory disease is the most frequent disease cause for condemnation."

And Georgia poultry scientists add that adverse weather or environmental conditions can make the problem worse. The Georgia group concludes: "Control of respiratory diseases will be necessary to reduce broiler condemnations, and improved environmental conditions are necessary to minimize respiratory diseases."

What can you do?

There is a simple, effective way to counteract the effects of many environmental and weather-caused stresses . . . to prevent constant disease drag and intestinal troubles that in turn make birds far more susceptible to CRD and other serious diseases. The answer is nf-180 protective feeding.

Wide-range protection

The drug nf-180 is particularly well-suited for protecting broilers. First, it is effective against an extremely wide range of diseases. In fact, *nf-180 prevents and controls more broiler diseases than any other drug.* It is the first drug many men turn to when trouble strikes.

Second, nf-180 is safe and nontoxic — no withdrawal period is required. It can be fed right up to marketing, thus helping you protect your birds during the critical finishing period. The end results are fewer condemned birds, faster gains, more profit.

How do you know nf-180 will work for you? Actually, you don't until you try it!

But a recent study of the daily records of a large processing plant in the South showed that, for most growers . . .

nf-180 effectively reduces condemnations

This study was conducted during early summer when condemnations ordinarily are not as serious as in winter. In fact, broilers not receiving nf-180 averaged only 2.93% rejects, the worst flock showing 6.16% loss.

But even here, where condemnations would not seem to be much of a problem, nf-180 showed considerable effectiveness! It cut the already-low condemnation rate by more than half . . . down to just 1.09%. The highest condemnation rate of any flock on nf-180 was 1.35%.

Even more important, nf-180 returned $33.88 per thousand birds, *over and above the cost of the drug,* when all benefits were figured. So nf-180 does not squeeze already-tight margins . . . it actually *widens* your profit margin!

How to use nf-180

Only you can decide how to use nf-180 most effectively to handle your own particular problems. Here are ideas other broilermen have found effective:

To reduce early chick losses: start your chicks on nf-180 medicated feed to provide 100 grams furazolidone per ton. Feed 1 lb. of this ration per chick (about 3 weeks).

For vaccination and other stresses: use an nf-180 medicated booster feed (100-200 grams furazolidone) for 7 to 14 days. Trials indicate feeding nf-180 at least 7 days prior to vaccination reduces outbreaks of CRD and other respiratory troubles.

To reduce condemnations and improve finish: feed 50 grams furazolidone per ton from the 6th week until marketing. nf-180 protects against CRD, synovitis, enteritis and other serious troubles.

Try nf-180. Compare growth, feed conversion, mortality and condemnations with previous flocks. You'll probably find the reduced number of rejects, alone, more than pays for nf-180.

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50 LBS. NET
MAYO'S
NEW-IMPROVED
SNOW FLAKE
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97% CALCIUM CARBONATE
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EXAMINE NEW POULTRY PRODUCTS—Examining new poultry products at the poultry conference of the 42nd annual convention of the Indiana Farm Bureau, Inc., in Indianapolis, are left to right: Kenneth Heidemann, director of finance and membership relations, Poultry & Egg National Board, Chicago; Harry Truax, manager, feed and poultry department, Indiana Farm Bureau Cooperative, Indianapolis; Dr. A. William Jasper, commodity division, American Farm Bureau Federation, Chicago; Dr. W. J. Stadelman, professor of poultry science, Purdue University, Lafayette, and Harmon Rogers, conference chairman, Indiana Farm Bureau. Mr. Heidemann discussed PENB activities and Mr. Jasper "bargaining for poultry and egg producers" at the conference.

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Southeastern Poultry School Dates Set

DECATUR, GA.—The Southeastern Poultry & Egg Assn. has announced tentative plans for the fifth annual Southeastern School of Management for the Poultry Industry, according to Harold Ford, executive secretary of the association.

The three sessions of the 1961 management training school are set for the weeks of April 23-28, Aug. 13-18, and Oct. 15-20.

The announcement was made at the close of the Fourth Annual Management school at the Continuing Education Center, in Athens, Ga.

Limited to 20 persons per year, the 3-week school is designed to present management techniques and information as they apply to businesses in the poultry industry.

Certificates were presented to the participants completing their third unit by J. M. Tankersley, SEPEA president. Those receiving certificates were: Smith Johnston, Woodstock, Ga.; T. H. Etheridge, Carthage, Miss.; Gerald Showalter, Gainesville, Ga.; Fred Masterson, Cullman, Ala.; H. D. Weber, Glastonbury, Conn.; Richard Noles, Athens, Ga.; W. B. Woosley, Jr., Shelbyville, Tenn.; Sterling Carter, Charlottesville, Va.; Bennett Fuller, Ronceverte, W. Va.; Frank Bontz, Jr., Harrisonburg, Va.; John Shaffer, Woodstock, Va.; Ralph Newman, Harrisonburg, Va.; Troy Sloan, Jackson, Miss.; Lamont Nucholls, Dalton, Ga.; J. R. Gipson, Philadelphia, Miss.; Joe Frank Sanderson, Laurel, Miss., and Paul Thomas, Sumter, S.C.

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Ordinary Vitamin K Premix	84%	67%	52%

STABILITY— field samples—ordinary vitamin K premix recently secured from feed mills

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(Actual potency of individual lots ranged from 0 to 45%)

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Changing Dairy Rations Affects Digestibility, Rumen Function, Feed Intake, Milk Production.

● H. R. Conrad, J. W. Hibbs, A. D. Pratt and J. H. Vandersall, Ohio Agricultural Experiment Station Research Bulletin 867, October, 1960.

ABSTRACT

Four winter feeding trials were conducted with a total of 74 milking cows (1954-57) to evaluate the effects from changing from various roughage combinations to those of somewhat different characteristics, i.e., from corn silage to legume-grass silage and hay. Since the roughages used in the experiments varied from experiment to experiment it seems wise to discuss each trial separately and then try to derive from the data the best over-all conclusions.

Trial 1—This investigation covered the entire period of the research project (1954-1957) and was part of an over-all project to be reported elsewhere to investigate the effects of various hay to silage and roughage to grain ratios on milk production. Fifteen head (12 Jersey, 3 Holstein) were used in 1954; 18 in 1955 (12 Jersey, 6 Holstein); 10 in 1956 (4 Jersey, 6 Holstein), and 12 in 1957 (4 Jersey, 8 Holstein). The period of the study covered the four week period before and four weeks after changing from corn silage to legume-grass silage and hay.

For the first three years, after the grass-silage feeding was begun, grain was fed in proportion to the roughage consumed, in the ratio of 3 parts of roughage and 1 part of grain on the dry basis. In the last year, both 2:1 and 3:1 ratios were used. The first three years, the cows were fed corn silage and first cutting alfalfa-grass or other types of mixed hay after the pasture season and then changed abruptly to legume-grass silage and hay fed in equal amounts on the dry basis. In the last year, they were adjusted to the legume-grass silage by feeding equal amounts with a mixed hay starting 2-4 weeks before their calving date. These cows were then changed to legume-grass silage as the only roughage.

During all of these trials dry matter digestibility and total nitrogen and nitrogen balance were determined using five or seven day collection periods at various intervals during the legume-grass silage feeding periods. Microbiological ratings were made on the cud material also from eight cows during the first year and from 10 cows the last year of the experiment. Grain was fed to all cows at rates adjusted for milk production before changing to grass-legume silage.

The results of the first three years' work clearly showed that when the animals were shifted abruptly from corn silage and hay to legume-grass silage and hay large decreases in milk production during the four week period were secured. These ranged from 7.8-21.5% of the milk production secured before the shift occurred. On the other hand, cows during the last year of the research showed no such decline in milk production when they were adjusted to the legume-grass silage as the only roughage by starting silage feeding with hay 2-4 weeks before changing to the silage alone. The decrease in milk production in the first three years was quite abrupt and then the average daily production leveled off according to lactation curve at a correspondingly lower level. In the last year when cows were shifted from legume-grass silage plus hay to legume-grass silage alone, it was noted that most of the Hay II class of bacteria were absent from representative rumen samples. Dry matter intakes and digestibility data showed no differences of mention.

Trial 2—Two small experiments, each involving four cows, were used to determine the effect of changing the roughage from corn silage and alfalfa hay to all legume-grass silage or corn-preserved legume-grass silage. In the first one, the cows had been receiving corn silage and mixed alfalfa-grass silage for a period exceeding two months time and they were changed over to free choice legume-grass silage as the only roughage during a 10-day changeover period. A constant rate of grain intake

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was held after legume-grass silage feeding started. The dry silage intake rose about 3 lb. during the first 21 days and then leveled out at approximately 14.5 lb. when legume-grass silage was fed after the corn silage and hay feeding period, but milk production declined sharply after the change-over and maintained itself at a significantly lowered rate. In this particular group of cattle protein digestibility increased as the cows became more used to the legume-grass silage diet, but over-all dry matter digestibility was relatively constant and low.

In the second trial of this phase of experimental work the four cows were placed on corn silage and alfalfa hay for a two week period after the pasture season. They were then changed abruptly to corn-preserved (150 lb. of corn and cob meal per ton), wilted legume-grass silage for a six week period. In contrast to the cows on the first trial, these cows did not increase in silage consumption within the experimental period after changing to corn-preserved legume-grass silage. Also, the average consumption of silage was much higher than for the cows in the first trial. Milk production did not decline, and compared to values for corn silage and hay feeding, the dry matter intake and digestibility were increased on corn-preserved grass-legume silage.

Trial 3—More detailed measurements were made in this trial to evaluate the effects of corn silage and hay versus legume-grass silage and hay, with respect to milk production, feed intake, digestibility and rumen synthesis. To help eliminate the possible effects of ration changes on rumen function indicated from the results of the previous two trials, one third of the dry roughage in both corn and legume-grass silage feeding periods was supplied by alfalfa hay containing 10-20% grass and the total protein content of the grain mixture was kept at 16% protein throughout. It was anticipated that the continued hay feeding would help maintain a more balanced rumen microflora and that a relatively high protein level in the grain mix would compensate for possible lowered protein synthesis after changing over from corn silage. Seven cows (4 Jersey, 2 Guernsey, 1 Holstein) were allowed to consume corn silage and alfalfa hay, free choice, on the dry basis of a 2:1 ratio for a period of seven weeks. The corn silage was then replaced abruptly with legume-grass silage and the 2:1 ratio of silage was continued for an additional five-week period.

As in the previous experiments, milk production dropped approximately 17% while digestible dry matter rose slightly after the changeover to grass-legume silage. The protein digestibility, ruminal protein synthesis, changes in types of rumen microorganisms or the amount of volatile fatty acids produced did not appear to be involved in this milk production drop according to the data collected.

The proportion of roughage to grain in the total ration shifted from approximately 50:50 during the corn silage feeding period to 68:32 when the legume-grass silage was fed. The over-all efficiency of nitrogen utilization remained the same, but the average nitrogen balance increased when grass-legume silage was fed.

Trial 4—Four cows were fed a wilted legume-grass silage as the only roughage for an eight-week period and then shifted abruptly to a corn preserved (200 lb. corn-and-cob meal per ton), wilted legume-grass silage which had been harvested from the same meadows, for an additional eight-week feeding period. At the end of the last feeding period they were then abruptly shifted to alfalfa hay as the only roughage for the final six-week period. Roughage and grain were fed at approximately a 2:1 ratio to two of the cows, and at approximately a 3:1 ratio to the other two.

The data showed that milk production and dry matter intake decreased as the dry matter digestibility dropped after abruptly changing the ration from wilted legume-grass silage to corn preserved legume-grass silage ensiled from the same forage crop. But, after 51 days on the corn-preserved silage the digestibility rose somewhat but did not regain its former level. After changing to the alfalfa hay, it was apparent that the cows had previously been limited quite seriously in digestibility of the ration formerly, since within four days after the change, dry matter intake and dry matter digestibility quickly rose to relatively high levels and, although the cows were in relatively late lactation, milk production began increasing, leveling off after two weeks on the alfalfa.

COMMENT

Although part of this investigation can be criticized for not having some of the features of well designed investigations, in that not all feed records, etc., were carefully kept for all phases of some of the trials, etc., it does serve to point out that cows are not machines which can be switched on or off at will. Care is necessary in making abrupt feed changes as milk production can seriously suffer. Also, there is a distinct possibility that at times of stress such as this, with cows of high producing ability early in lactation, incidence of ketosis can be increased.

It is rather important to note from these trials also that some criteria other than digestibility are necessary to separate out the factor(s) in legume-grass silage which depressed milk production in the trials when cows were abruptly switched. This is because although lowered digestibility appeared to account for the lowered milk production in some of the trials, it did not account for it in others. The best results of forage-crop silage feeding were secured when the feeding was started about 3-6 weeks before freshening and continued through the early months of the lactation and not changing suddenly from corn silage and hay to legume-grass silage and hay.

Where lowered digestibility was ob-

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served from legume-grass silage feeding, generally, the digestibility improved somewhat over a period of 3-4 weeks after starting such feeding. It is also apparent that when cows are changed abruptly from corn silage to grass silage without an increase in grain to compensate for that lost in the corn in the silage, they experience a reduction in energy intake and a change in the bacterial population of the rumen. While rumen bacteria become adjusted to the shift, digestibility of ration usually decreases. It is equally apparent that digestibility may be lowered when changing from forage crop silage to corn silage, because of necessary bacterial population adjustments.

In the last trial during which an attempt was made to eliminate the possible effects of abrupt ratio changes on the rumen microflora and protein synthesis, it was shown that changing abruptly from corn silage and hay to a legume-grass silage and hay diet decreased milk production significantly while at the same time dry matter digestibility, feed intake and nitrogen retention increased. Since total nitrogen efficiency and calculated net energy intake remained about equal for the two feeding periods, this particular trial as well as the results from the preceding ones indicate that legume-grass silage may contain substances which suppress milk production quite independently of those effects upon microflora of the rumen and digestibility of the diet.

The authors of the bulletin offer the following suggestions to help prevent drops in milk production while still at the same time making use of amounts of forage crops; this is good advice for all feed men to take up on their bulletin boards:

"1. Sudden ration changes should be avoided whenever possible.

"2. Adapt cows to forage-crop silage during the month before freshening.

"3. If possible, avoid refilling silos containing grass-legume silage with corn silage. If this is necessary, use corn-and-cob meal to preserve the forage-crop silage (150 lb. per ton).

"4. Use early-cut forage for silage making.

"5. The digestible protein content of the total ration should be maintained at 8% or higher when large amounts of forage-crop silage are being fed.

"6. Certain systems of roughage feeding tend to complement each other and thus reduce the effects of sudden ration changes. The following suggested systems of changing roughages will help to avoid some of the more drastic effects of sudden ration changes:

"(a) Green chop or pasture to hay.

"(b) Legume-grass silage with or without hay throughout the year.

"(c) Pasture followed by gradual change to legume-grass silage and hay.

"(d) Pasture or green chop to corn silage and alfalfa hay.

"(e) Pasture to corn silage to corn-preserved legume-grass silage."

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'Rare Birds' Fly About in Deep Forest of Credit

"Rare birds" is the classification devised by Ogden Confer, president, Hubbard Milling Co., Mankato, Minn., for some of the applicants who seek credit from feed manufacturers. He used that theme in a talk he gave before the Sales Executives Council of the American Feed Manufacturers Assn. during its meeting last September in Chicago (Feedstuffs, Sept. 24).

He said most of these "rare birds" should be behind glass in a museum. "The trouble is," he added, "they haven't become extinct yet, though every rule of common sense says they should be."

Mr. Confer had color film slides specially prepared for his talk to illustrate the types of "birds" a feed company encounters in "the deep green forest of credit."

Specifically, these "birds" include the tired, lazy feed dealer who sells or attempts to sell multiple lines of branded feeds . . . the would-be turkey, broiler or egg producer who asks for $40,000 worth of feed credit but has an actual net worth of about "$200 in cash and five cows" . . . the "tonnage buster" who prompts the feed company approached to wonder just how much it can lend per ton of feed.

"Be Alert"

"We want to be on the alert constantly so none of us get stuck with birds of this kind," Mr. Confer warned.

Even the good-credit-risk bird is a "rare bird," because as Mr. Confer noted, he's "one bird in the credit forest we don't see very often."

Mr. Confer said, "As dealers and farmers become bigger—and more specialized—credit becomes more vital than ever. That's why feed manufacturers must take a long hard look at credit. The future of their companies—yes, their very existence—may depend on credit policy and how that policy is carried out."

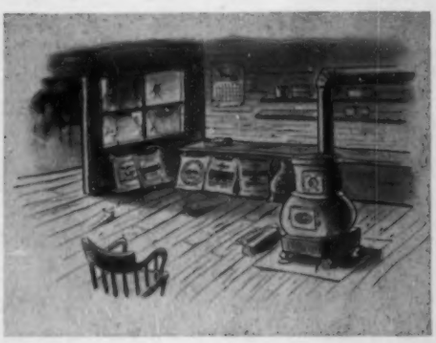
Bird Watcher's Tour

Through the cooperation of Mr. Confer, Feedstuffs has used the text of his talk and the slides he used to illustrate it to introduce you to the "rare birds" found in the credit circle surrounding the feed industry. So, to learn more about these creatures who in Mr. Confer's opinion "should be exterminated and classed with the dodo," let's hike off on a bird watchers' tour. . . .

BIRDS OF A FEATHER—In the deep green forest of credit there are birds of many species—and you'll meet examples of several as we tramp through the forest and eye the limbs on which they're perched. One may look like another, but that doesn't mean they think or act alike. Some of these birds are of real value to the feed industry, but there are always a few predators . . . a few scavengers . . . and a few like . . .

JOHN LACK A DAY—This is his feed store at the edge of the forest. The appearance of his rundown store tells plenty about his business practices. Somehow, he's been able to stay in business, but still he can't provide the information necessary to make an intelligent decision. A logical question: Isn't the manufacturer justified in expecting sound financial data with each credit request?

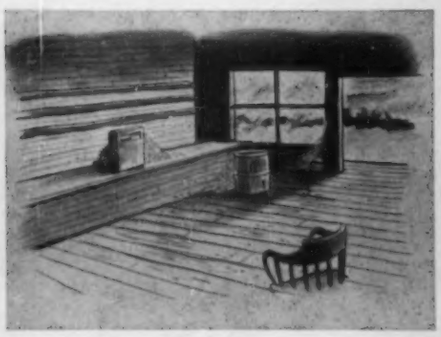
CLOSEUP—Let's take a closer look at this bird Mr. Lack a Day. Here he is sitting on the front steps of his store. His call of greeting is: "I can buy and sell your mill! I can buy and sell your mill! I can buy and sell your mill!" Not a very friendly fellow is he? What credit does he want? Oh, $10,000 open credit for 90 days—but what's he got to back it up?



INSIDE THE STORE—Let's see . . . there's one . . . two . . . three . . . four . . . five . . . six different brands of feed handled by Mr. Lack a Day. A feed manufacturer might ask: "Why does he want credit from us when he's already doing business with six other feed companies? Oh, I see, he wants to pay them off." Mr. Lack a Day manages everything himself; says he can't trust anyone else.

RETURNING TO THE CREDIT FOREST we hear another call coming through: "I'm as good as gold! . . . Good as gold! . . . Good as gold!" The bird that makes a noise like that looks like the turkey raiser above, calmly leaning against the fence. He wants to raise 10,000 birds — needs $40,000 feed credit. Says he's worth $51,000, but a more realistic assessment would be $200 in cash and five cows.

SMUG AND CHESTY—Back to the timber again. And this time we find a bird who wants to buy 10,000 pullets—he can pick them up at 20 weeks for $2 each. The financing deal sounds good until a few questions are asked. Like: Can he pay the interest? What about medication? Death loss? Depreciation on housing and equipment? The taker would have to put up $450 credit for every ton of feed he could sell. . . .



. . . **SO, LET'S GO BACK** to the woods. Bound to be a better credit risk somewhere. But we have our doubts, too, about this next prospect who runs a dead store like the one conceived above. No equipment? No bulk tanks? Oh! He's going to a concentrate program and make his own feeds—plans to buy the equipment by mortgaging his car and house. But how about capital for inventories, receivables?

BIRD WITH A PLAN—This bird says he's going to deal strictly for cash and shorten up on inventory so he can operate on the supplier's terms. Can he make such a radical change in the business? How much tonnage do you estimate he'll take? Maybe 10 tons of concentrates a month and two tons of scratch feed? Sorry, but we've hit another bird who doesn't make much sense. But we can't give up yet.

AH HAH! Who's this bright, prosperous, happy bird? Don't see many like him around—but he looks just like the kind we've been hunting for. Maybe our search will come to something after all. Think we'd be doing a fair thing by putting him in business. His chances for survival look good. We like him. He sings the sweetest song of all: "Ship it sight draft . . . ship it sight draft . . . ship it sight draft."

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Researchers Study Copper Deficiencies In Cattle and Sheep

OAK RIDGE, TENN. — Research conducted at the University of Tennessee - Atomic Energy Commission Agricultural Research Laboratory at Oak Ridge, Tenn., may help livestock producers and the feed industry to correct copper deficiency in cattle and sheep.

Symptoms of copper deficiency range from poor hair costs and poor weight gains to serious weight loss, anemia and even death of the animal. Past research has indicated that it is cheaper to give copper to animals directly through feed, rather than fertilize the soil which produces feed for the cows and sheep.

However, an animal may lack copper even if its ration is high in copper content. This is in areas where there is too much molybdenum. An animal also uses some forms of copper much more efficiently than others.

Dr. J. W. Lassiter, an Oak Ridge institute of nuclear studies research participant from the University of Georgia, and Dr. M. C. Bell of the UT-AEC laboratory recently conducted copper experiments with sheep. They wanted to learn how the animals use and excrete copper given them in various chemical and physical forms. Stable copper compounds were activated in a graphite reactor to obtain radioactive copper-64 labeled compounds.

Three Experiments

All urine and feces excreted by the sheep were collected and analyzed. The radioactive copper-labeled compounds were given the sheep either by mouth in a gelatin capsule or intravenously. Three four-day experiments were conducted.

Less than 3% of intravenously-administered copper was excreted within 96 hours no matter how it was injected. About half was excreted in both urine and feces. On the average, blood, plasma, urine, and feces contained less of a sulfate form of copper than chloride or nitrate after intravenous dosing. This indicates that the sulfate form enters tissue more readily than the chloride and nitrate forms of copper.

When the compounds were given by mouth, much less copper was excreted in the urine and more was lost with the feces. Probably most of the copper that was excreted in the feces stayed in the gastro-intestinal tract and was never available for use, while that found in the urine was absorbed by the system and was available, but was not used.

Copper oxides were less available to the sheep than the more soluble compounds. However, the radioactive copper was much more available from powdered oxides than from solid oxide compounds.

These experiments show that copper availability to sheep depends on its chemical and physical forms and perhaps other factors. This and other research in progress or to be started with other animals—including cattle and swine—may show the feed industry which forms of copper are most efficiently used by an animal's body, and which should go into livestock feeds. Improved feeds resulting from this research should help reduce copper deficiency in the livestock population.

Feed Grain Men Eye Japan's Import Needs

AMARILLO, TEXAS — United States feed grain producers and handlers are focusing their attention on reported expectations of large increases in the production of milk, meat and eggs in Japan in the immediate future. This, in turn, would be expected to increase Japan's needs for additional imports of feed grains from the world market.

In order to appraise the potential in this area, the U.S. Feed Grains Council is sending a 5-man team of experts to Japan. This group includes the following:

Dr. Julius Hendel, Minneapolis, grain trade consultant and director of the Feed Grains Council; David Ross, Minneapolis, vice president, Nutrena Mills, Inc.; Dr. Richard C. Eaton, St. Louis, Ralston Purina Co. nutritionist; John J. McCracken, grain marketing specialist, Foreign Agricultural Service, U.S. Department of Agriculture, and Delmar G. Nelson, executive director, U.S. Feed Grains Council, Amarillo, Texas.

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MEETING

(Continued from page 11)

Maner and J. K. Loosli, Cornell: Scientists have searched for a method of increasing the level of iron in the milk. One approach that was tested in the research reported here was to inject iron intramuscularly into the sows either post- or pre-parturition. However, both methods appeared to have little value. Levels of 0, 2, 2.5, 5 and 10 mg. of iron per pound of body weight were injected intramuscularly into sows 6-9 days after farrowing. Analysis of the milk samples obtained before and at various intervals following the injection revealed that little or no mammary transfer of the iron occurred. Other sows were injected at 100 days gestation. Pigs from the injected sows had hemoglobin values averaging less than 5 gm. % at 10 days of age, indicating an anemic condition. A single oral dose of 400 mg. ferrous iron to the baby pigs appeared to be slightly superior to the ferric form in maintaining hemoglobin levels.

Energy

The proper level of energy to feed pigs under varying conditions was studied and reported. In general, many of the previous trials have indicated a pig has only a certain inherited capacity from growth and that the majority of our rations for swine contain as much energy as the growing pig is able to use. When such rations are given a higher caloric value through the use of added fats and oils, pigs tend to "pile on" more fat in their various fat depots. Usually such pigs gain faster but produce inferior carcasses.

AN EVALUATION OF CALORIE-PROTEIN RATIOS FOR GROWING-FINISHING SWINE—D. E. Boenker, L. F. Tribble and W. H. Pfander, Missouri: Duroc and Hampshire weanling pigs were fed corn-soy rations containing three levels of protein, 13, 16 and 19% (reduced to 10, 13 and 16% after 125 lb.) and three levels of metabolizable energy, 1,266, 1,430 and 1,592 calories per pound. The calorie-protein ratio had no effect on growth, feed efficiency or ration digestibility. Rates of gain and efficiency of feed conversion were improved as the level of energy was increased. Widening the calorie-protein ratio or increasing the level of energy resulted in increased backfat thickness.

PROTEIN-ENERGY RELATIONSHIPS IN THE RATIONS OF EARLY WEANED PIGS—R. F. Sewell, M. C. Thomas, Georgia: Rations containing 10, 15 or 20% of protein and one of two levels of fat (soybean oil) were fed to pigs weaned at three weeks of age. Growth rate increased markedly when the protein level was increased from 10% to 15%. Increasing the energy density of the ration by adding corn oil increased the rate of gain with a corresponding improvement in feed efficiency. However, reference was not made as to the effect on carcass fat deposition.

ADDITION OF TALLOW TO SWINE RATIONS CONTAINING THREE LEVELS OF PROTEIN—D. M. Thrasher, A. M. Mullins, Sam L. Hansard, Paul B. Brown and R. F. Boulware, Louisiana: The addition of 10% of stabilized tallow to swine rations caused a highly significant increase in rate of gain of weanling gilts, but not barrows. However, a highly significant increase in carcass fat deposition resulted from feeding the tallow. Pigs fed either a 15% or 18% protein ration gained significantly faster than those fed a 12% protein ration.

EFFECT OF LEVEL OF ENERGY INTAKE DURING GESTATION ON CONDITION AND PERFORMANCE OF SWINE—B. T. Dean and L. F. Tribble, Missouri: Limited-fed sows and gilts farrowed and weaned larger litters than normal-fed groups. Furthermore, in all but one trial, limited-fed sows and gilts weaned a greater percentage of the pigs farrowed.

A series of five experiments were conducted to study the effect of energy level on the reproductive performance of sows and gilts. A constant and equal amount of protein supplement containing vitamins and minerals was fed to each group. Variation in energy levels was controlled by the level of shelled corn fed. One group was fed to make the desired gain recommended by the National Research Council. The other group was fed a limited amount of shelled corn to make approximately two thirds of the gain of the normal-fed group. Normal-fed sows and gilts gained an average of 114 lb. during gestation as compared to an average of 70 lb. for the limited group.

Calcium and Phosphorus

PHOSPHORUS LEVELS AND CALCIUM-PHOSPHORUS RATIOS FOR YOUNG AND GROWING-FINISHING SWINE—G. E. Combs, J. M. Vandepopuliere, H. D. Wallace and M. Koger, Florida: How much phosphorus should be fed to two week old pigs? It appeared that levels of 0.48, 0.60 and 0.72% of phosphorus were equally effective levels of phosphorus, but 0.24 and 0.36% were inadequate.

CALCIUM REQUIREMENT OF THE BABY PIG—E. R. Miller, D. E. Ullrey, C. L. Zutaut, D. A. Schmidt, E. A. Alexander, B. V. Baltzer, J. A. Hoefer and R. W. Luecke, Michigan: Apparently a level of 0.8% calcium is optimum for pigs receiving a ration containing 0.5% phosphorus. Forty baby pigs receiving a synthetic milk diet were used in two trials in which levels of 0, 0.4, 0.6, 0.8, 1.0, 1.2 and 1.6% calcium were added. Pigs receiving no calcium exhibited classical clinical and sub-clinical symptoms including severe rickets, tetanic convulsions, increased blood clotting time, and others.

CALCIUM STUDIES WITH BABY PIGS—D. R. Zimmerman, V. C. Speer, D. V. Catron and V. W. Hays, Iowa: Rations that contained more than 0.8% calcium caused a growth depression in pigs between 2 and 6 weeks of age. Calcium levels ranging from 0.52-1.05% were used in combination with either 0.52 or 0.70% phosphorus. In general, 0.52% calcium was inadequate for maximum growth and efficiency of feed utilization while 0.70% calcium was adequate. High calcium intakes depressed growth rate in the presence or absence of Aureomycin in the ration.

Miscellaneous

COMPARISON OF SUGAR AND ARTIFICIAL SWEETNESS IN BABY PIG DIETS—L. E. Grinstead, V. C. Speer, D. V. Catron and V. W. Hays, Iowa: Baby pigs definitely have a "sweet tooth" which is not appeased by artificial sweeteners. The artificial sweetener used was a 90% saccharin sodium and 10% sodium cyclamate. One hundred and eight two-week-old pigs were used in two preference trials to compare the palatability of starter diets containing no sweetener, an artificial sweetener, sucrose, or a combination of sucrose and artificial sweetener. The pigs preference ran to sucrose sweetened rations by a large margin. Also, a combination of sucrose and artificial sweetener was preferable to the unsweetened ration. However, the basal ration was preferred to the ration which contained the artificial sweetener but not sucrose.

DIGESTIBLE ENERGY AND NITROGEN, AND RATE OF FOOD PASSAGE IN PIGS FED MEAL AND PELLETS—R. W. Seerley, J. A. Hoefer and E. R. Miller, Michigan; **GROWTH AND FEED EFFICIENCY STUDIES WITH PIGS FED MEAL AND PELLETS**—R. W. Seerley, J. A. Hoefer and E. R. Miller, Michigan: Pelleting significantly improved gains and feed efficiency of pigs fed a corn-soy diet or those fed either a 20 or 40% oats diet. This was true whether the comparative rations were paired-fed or whether they were fed according to appetite. However, the difference was greatest in favor of the pelleted ration when the rations were offered ad libitum, or according to appetite. From the digestion standpoint, apparent digestible nitrogen values were not significantly different. Pooled ration data showed that pelleted mean particle retention time was significantly less than the meal, indicating faster passage with the pellets.

Previous research has not indicated much advantage for the pelleting of swine rations. The exception to this is in the case of barley rations which, because of the hull, has many characteristics in common with oats. However, the boost in gain from pelleted corn rations is surprising.

ROLE OF SUPPLEMENTAL VITAMINS IN A LEGUME-FREE RATION FOR GILTS IN DRY LOT—H. S. Teague, Ohio: Pregnant sows in dry lot need either high quality forage such as dehydrated alfalfa meal, or else identified and unidentified factors contained in high quality forage if they are to produce large and vigorous litters.

Three trials were conducted to observe the reproductive performance of gilts when fed a legume-free ration with or without fat soluble and/or water soluble vitamin supplementation. After a preliminary feeding period of 60 days a lack of something—vitamins?—was associated with poorer breeding in one trial, but not in a second trial. However, the gilts were bred and farrowed 9.2 live pigs per litter. Some or all pigs in five of the litters developed an exudative dermatitis which usually results in death of the animal.

EFFECT OF DIETARY NITRATE ON GROWTH AND REPRODUCTIVE PERFORMANCE OF SWINE—J. T. Tollett, D. E. Becker, A. H. Jensen and S. W. Terrill, Illinois: Nitrates have been accused of interfering with the utilization of vitamin A and/or carotene. The picture is not very clear. Illinois reported the results of four trials in which potassium nitrate was added to the rations. Nitrate additions above 1.84% significantly depressed the rate of gain. KCl and $NaNO_3$ were fed in a subsequent trial to identify whether it was potassium, the nitrate or both that was causing the effect. Both sodium nitrate and potassium nitrate caused growth depression, but not potassium chloride. In a third trial, various levels of vitamin A were fed. In all cases, regardless of the level of the vitamin A fed, the growth of pigs receiving 3.17% of nitrate was depressed.

USE OF AN ELECTRONICALLY COMPUTED LEAST-COST RATION IN TESTING THE ADEQUACY OF THE FEEDING STANDARD FOR EARLY-WEANED PIGS—E. W. Crampton, L. E. Lloyd and D. N. Mowat, McGill: A new personality has appeared in the field of ration formulation. This is a mechanical brain which is capable of calculating least cost. This paper reported the performance of early weaned pigs (21

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HONORARY DOCTOR DEGREE—S. C. Barry, left, Canadian deputy minister of agriculture, received the honorary Doctor of Science degree from the University of British Columbia, from which he was graduated in agriculture in 1923. At right is E. E. Peden, president of the Canadian Feed Manufacturers National Assn.

days of age) fed in a comparative feeding trial for six weeks on an electronically computed least-cost ration. The pigs on the least-cost ration ate 11% less feed than those on a nutritionally proven early weaning ration, but gained at almost an identical rate. Thus there was an improvement in feed efficiency in the order of 10%.

With this additional encroachment of mechanical brains upon jobs normally performed by men, an end of the college professor and of the commercial nutritionist may be imminent. Here is an example of mechanical brain doing a better job of ration formulation than a team of highly trained scientists.

Animal Production Group Holds Election

CHICAGO—The American Society of Animal Production elected Dr. H. H. Stonaker, department of animal science, Colorado State University, Ft. Collins, Colo., as president at its recent annual meeting at the Sherman Hotel here.

Vice president is Dr. T. J. Cunha, animal science department, University of Florida Experiment Station, Gainesville, Fla., and secretary-treasurer is C. E. Terrell, animal husbandry research division, Agricultural Center, U.S. Department of Agriculture, Beltsville, Md.

The association voted to hold its 1961 convention in Chicago.

Paul Crockett Joins Feedstuffs Staff

MINNEAPOLIS—Paul B. Crockett has been named to the editorial staff of Feedstuffs, Milton B. Kihlstrum, president of The Miller Publishing Co., announced this week.

P. B. Crockett

Mr. Crockett formerly was news editor of the Eagle Grove (Iowa) Eagle. He also was a field editor for the Iowa Rural Electric News.

He is an agricultural journalism graduate of Iowa State University and a member of Sigma Delta Chi. A native of Britt, Iowa, he was graduated from the Britt Community High School in 1955.

Help Fight TB

Use Christmas Seals

Vineland Appoints Sales, Service Man

VINELAND, N.J.—Leo Taylor has been named as sales and service representative in the western division of Vineland Poultry Laboratories, according to an announcement by Dr. Tevis M. Goldhaft, director of the firm.

Mr. Taylor will be located in California, his home state, where he will work under the supervision of Donald M. Taylor, western division sales manager. The two men are not related.

Prior to joining the Vineland Poultry staff Mr. Taylor managed the plant of the Bell Milling Co. in Escondido, Cal. Earlier he had been sales supervisor at Albers Milling Co. in Los Angeles, a post he held for nearly 10 years.

GENERAL MILLS DIVIDEND

MINNEAPOLIS—The board of directors of General Mills, Inc., has declared a quarterly dividend of $1.25 per share on General Mills 5% preferred stock payable Jan. 1, 1961, to stockholders of record Dec. 9, 1960. This is the 85th consecutive quarterly dividend on General Mills, Inc., 5% preferred stock.

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BROILER MEETING—Men from all segments of the broiler growing industry in Georgia met recently in Claxton, Ga., to discuss the problems and the future of the business in southern Georgia. Some of those men speaking at the meeting include, from left: Dewey McNiece, poultry extension, University of Georgia, moderator; Lannis Thomas, South Georgia Broilers, Blackshear; Emory Godbee, Glenville Hatchery, Glenville; Hugh Thompson, Thompson Farm Supply, Vidalia, and George King, district sales representative, Ralston Purina Co., Glenville.

Georgia Broiler Men Meet To Discuss Problems, Future

By ROBERT BROWN
Feedstuffs Special Correspondent

CLAXTON, GA.—"I would like to see every small farmer made more financially independent by having a hog parlor, a brooder house, some cattle and, last but not least, a 12,000-broiler house. If this could be arranged, the small farmers would be able to stay on the farm."

These are the words of A. B. James, Satilla Production Credit Assn., as part of a talk presented at a one-day meeting of all segments of the broiler industry in southern Georgia. The group met to discuss local problems regarding broiler growing, its future and the need for cooperation.

"If we could accomplish this," Mr. James continued, "farmers wouldn't have to borrow so much. We're giving five years to pay off broiler houses. We have owners who are getting $2,400 a year from these houses and all of them have been able to meet the required payments."

However, federal funds are urgently needed to finance small farmers who have been faced with low allotments. He suggested some type of FHA financing. It would mean keeping a lot of small farmers on the land.

"These people want to stay on farms, but they need help," he added.

Available Money

There is money available to this type of operation, too, provided the operator is on sound ground and is looking toward the long-range future, Mr. James said.

Gordon Roundtree, vice president of the Pineland Bank, Netter, also voiced the opinion there is money available for the poultry business but he emphasized the financial world is looking toward the "long-range picture in the business" rather than speculation on short terms.

"With the individual 'wring-out' situation in poultry today, the basic fundamental is long range planning. We all know major feed mill credit is approved by a central committee. Lenders are looking toward this long-range planning rather than speculation on a short haul," he said.

Mr. Roundtree urged poultry people to become well acquainted with bankers and to make the bankers well acquainted with the poultry business. Drop in to see the banker frequently and talk over problems, he suggested, and always have a definite plan on borrowed money, with plans to pay it back. It is also essential to apply for funds well in advance of needs and to make certain a competent accountant is used.

The Claxton meeting was one of the first of its kind ever held in this broiler-growing state. The purpose was to get all branches of the business working together. This includes the banker, the county agent, the processor, the grower and the feedman.

Avoid Mistakes

Since the broiler business is apparently on the increase in the southern part of the state, one of the purposes of such a meeting is to help avoid making some of the mistakes other areas made when they moved into the growing of birds, said Dewey McNiece, Georgia poultry extension department.

The need for more research on housing was stressed by Arthur Gannon of the Georgia extension service and Hank Deloney, district sales representative of the Ralston Purina Co., Douglas, Ga.

"A lot of people are working on housing," said Mr. Gannon. "Meanwhile, floor space, sanitation, heat, cracks, all are sum totals to which birds are subjected. Probably the most important control is ventilation because air movement is important. Ventilation engineers are needed to make these decisions.

"Environment control is another factor, involving the location of houses. Some are located in hollows and valleys where frost and chilly conditions exist, rather than locating them on hill tops where the farmers usually have their prized fruit trees," he said.

"Cheaper housing has been one of the advantages the South has to offer," Mr. Gannon said. "But there is room for improvement. Good ventilation is one of the more important items needed and is more important than the width and length of a building."

Bankers also regard the construction of better houses as long-range thinking. Mr. James said that his company is requiring that all houses have permanent foundations and a metal roof.

One of the purposes of the meeting was to give closer ties between the county agents, extension people and the various branches of the business, especially from the feed man's angle.

One dealer said he welcomed the county agent's assistance.

Encourage Cooperation

"We would like to encourage county agents to cooperate with us. We think they can help us with the farmers, because we know the farmers have a lot of respect for them. They will believe an agent when they won't believe a commercial man," said Lannis L. Thomas, South Georgia Broilers, Blackshear.

"The county agent has an advan-

tage over a businessman because he can sit on a stump in the field and talk to the farmer man-to-man," said Mr. Thomas. "I would be glad to open my books to the county agent so that he can see who is doing a good job."

Charles R. O'Kelley, state agricultural leader, extension service, said the county agents are anxious to lend assistance and that was the main reason why the conference was called —to bring together financiers, supply men and growers.

"Integration has spread to industry. In recent years, the county agents have been equipped to do the job in diffusing information. Since this has become an age of specialization the county agent may not know all the answers, but there are specialists to keep him fortified with information. We must work in industry groups. The county agent is the key link," Mr. O'Kelley said.

v v

Broiler Contract Provisions Noted At Georgia Meeting

CLAXTON, GA.—Even in the newer broiler-raising sections of south Georgia, contract growing of birds is the most popular method, agreed a panel of experts meeting at a one-day broiler conference held recently in Claxton. One reason given by the panel for the popularity of contracts —independent producers are often unreliable.

Lannis L. Thomas of South Georgia Broilers, said it is his opinion that he can work up a better contract on the basis of what a man does on an incentive basis.

"I've been working on a contract lately based on weather conditions, etc., allowing the grower so much for feed. For every bit he saves, I'm paying him back on the basis of 4¢ lb. That way, if a grower gets 3 lb. and uses 2½ lb., he gets a credit on the difference," Mr. Thomas said.

Incentive Plan

Emory Godbee, Glenville Hatchery, Glenville, also reported he is sold on an incentive plan. He uses a 70-30% contract, although he has some growers on a flat basis. "Soon," he said, "I hope to do away with the flat rate contract and use a 70-30 basis entirely.

"Growers make more off the percentage contract, but it is difficult to get them off the flat rate. They don't see the commission deal. There is no loss. We take the invoice price of feed, deliver, and then take 30% of the profit. There is a no-loss guarantee. If the market goes higher, we get a higher net and so does the grower. This plan makes more money for both the grower and for us," Mr. Godbee said.

H. Thompson, Thompson Farm Supply, Vidalia, pointed out that he puts out chicks for what the hatchery charges, supplies feed and guarantees 1¢ a pound or divides the profit, whichever is greater. Virtually all of his growers are on this plan.

All agreed the contract method isn't a bad deal for either party, but the good grower often gets penalized for the poor job some growers may be doing.

Independent Growers

"Independents are spasmodic," said George King, district representative for Ralston Purina Co., "and when times are good they take the leap.

"The independent grower is not as happy as it sometimes looks. He is on his own; he has to pay for feed as delivered and often has a hard time getting enough margin for this. Then, he has an automobile or an appliance to pay for and he may decide to let the feed bill go a while.

"The dealer has a hard time controlling the situation. When times are good, and the independent producer is getting good prices, he wants to expand. Next thing you know, he has other people growing for him and he is in pretty deep.

"In spite of all this I'm not so sure that the number of independent operators isn't increasing in South Georgia," commented Mr. King.

Independents in the southern portion of the state have been encouraged and fortunate because of very few outbreaks of diseases—and they have made some money, he said. "But when this operator starts branching out and hiring other people to grow broilers for him, he often is asking for trouble," Mr. King said.

OKLAHOMA FIRM BURNS

OKLAHOMA CITY, OKLA. — The Mauldin Feed & Seed Co., Hugo, Okla., was destroyed by fire Nov. 26 with damage estimated to be $100,000. Vernon Mauldin, owner, said the fire originated in a small one-story brick building, adjoining the two-story structure. Stocks burned included merchandise, extensive supplies and fertilizer.

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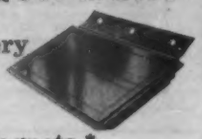

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EXPANDED SERVICE—Past presidents of the Grain Processing Machinery Manufacturers Assn., George Thomas, Prater Pulverizer Co., left, and Harold Alsted, Sprout, Waldron & Co., Inc., center, discuss a new program of expanded services to members with current president C. N. Hultberg, California Pellet Mill Co., at a recent directors meeting. The services include regular releases of news letters, technical paper abstracts and other aids to members.

GPMMA Has Expanded Service Program

KANSAS CITY—The Grain Processing Machinery Manufacturers Assn. (GPMMA), now well established in its new Kansas City office, has announced a program of expanded services for its members and the feed processing industry, according to the GPMMA president, C. N. Hultberg.

Since the association named John H. Wessman as its first full-time secretary last summer, efforts have been centered around developing a comprehensive program of "service to agriculture through services to the feed and grain industry," the avowed purpose of GPMMA.

The establishment of the office in the heart of the nation's agricultural area is said to have enabled Mr. Wessman, who had previous experience as an agricultural engineer with a major farm machinery manufacturing company and the Feed Production School, to develop closer contacts for the association with various organizations and educational institutions important to the industry. It is through these relationships that Mr. Wessman believes GPMMA can be of greater service.

"GPMMA has direct contact with 54 trade organizations which have interests in agri-business," Mr. Wessman said. "In addition, we are in close touch with engineering and agricultural departments of 47 colleges and universities throughout the U.S. and Canada, as well as with the Agricultural Research Section of the U.S. Department of Agriculture, Beltsville, Md. From these sources, we are gathering information of technical and general business nature for dissemination to our members."

GPMMA is also helping its members in the research field. Steps in this program include the establishment of the need for research, "searching the literature" and assisting in lining up cooperators on the selected research.

GPMMA is actively working with universities and colleges, particularly Kansas State University, to help develop curricula that will train the men needed in the industry.

Services of this nature, Mr. Wessman believes, will ultimately help the feed industry do a better job of serving its customers' needs.

Officers of GPMMA are C. N. Hultberg, California Pellet Mill Co., president, and Alexis C. Barbeau, Jr., S. Howes Co., Inc., vice president. Directors are: Harold J. Alsted, Sprout, Waldron & Co., Inc.; Richard L. Crom, Butler Manufacturing Co.; Irl A. Daffin, Daffin Corp.; R. F. Merwin, Eriez Manufacturing Co.; C. Robert Myers, Myers-Sherman Co.; Walter C. Ronk, Barnard & Leas Manufacturing Co.; H. M. Soars, Sprout, Waldron & Co., Inc.; George F. Thomas, Prater Pulverizer Co., and Ralph E. Williams, B. F. Gump Co.

CONFIDENCE

(Continued from page 16)

will give us four Dog Chow plants in the U.S.

"Chex cereal sales," says the report, "have been growing six times as fast as the industry over the past six years." Purina has completed a new cereal and dog food plant at Clarkson, Ontario, and has introduced its cereals and dog foods to Canadian consumers.

In addition to being the world's largest feed manufacturer, Purina claims also that it markets "the most complete line of poultry and livestock disinfectants, cleaners, insecticides, wormers and treatments for disease."

Sales in the sanitation and farm supply division were down during part of the 1960 fiscal year, because of "less favorable conditions in the hog and poultry industries," but, as Purina's annual report notes, "by year-end the trend was up again."

The report adds, "New, more aggressive marketing plans for 1961 already are showing what can be done when coordinated sales, promotion and advertising plans work together."

(Brief reports of other divisions and a tabulation of Purina financial highlights appeared in Feedstuffs Dec. 3.)

Public Relations Need In Grain, Feed Told

MANHATTAN, KANSAS—The inadequacy of the public relations efforts of the grain and feed industry was pointed out to persons attending the Kansas State University Grain & Feed Industries Business Management Conference by Ron Kennedy, vice president, F. H. Peavey & Co., Minneapolis. Mr. Kennedy is chairman of the public relations committee of the Grain & Feed Dealers National Assn.

Of the grain and feed industry, Mr. Kennedy said, "Our highly individualistic and competitive nature has kept us from doing enough collectively in the field of information. The socialists have found us middlemen a fertile field for the divide-and-conquer technique. Who is going to stand beside one broker, or one commission man, or one mrechandiser or trader when a public corporation decides to displace his function?"

"Public approval is the only path to sustained support and understanding of what we are attempting to do," Mr. Kennedy said in urging a broader program of public relations for the two industries.

He said that public intervention in the two businesses indicates they do not have public approval. Instances of intervention he cited were: A huge government corporation is the biggest grain operator; the storage segment of the industry was held up to public ridicule and made a political scapegoat; public agencies regulate procedures and ingredients in feeds; market trading operations are policed by the federal government; the wheat grower public expresses dissatisfaction with the way wheat is marketed overseas and farmers frequently show a skepticism of the industry's middleman function and ask if the farmer is getting his fair share of the consumer dollar.

Mr. Kennedy said, "It is all very well for us to say, 'But they don't understand us' and this is the usual plaintive cry of those who wind up on the short end of the stick. The cry, however, is not enough. We are all big boys now and we begin to see that what people have in their minds about us can be just as important as getting their day-to-day business."

On the need for telling the industry's story, he concluded, "Our story is the message of capitalism itself. Nowhere have the good fruits of the consumer free choice system been realized more fully than in the food business. By any measure whatsoever we look good."

ENGINEER STRIKES BLOW FOR HAYFERS

DAVIS, CAL. — A University of California agricultural engineer says "hayfers" can be formed by a hammer blow on an anvil rather than by pressure.

But, says Dr. William Chancellor of the Davis campus, the hammer process is less efficient than the use of static loads. The wafers are less dense and less durable, Dr. Chancellor said.

The wafers can be made rapidly on the anvil using only low forces in applying the hammer. Wafer quality can be improved by using a heavier hammer and moving it more slowly or by making a longer wafer. Both measures cause the pressure to be applied for a longer time and produce a denser, longer-lasting hayfer, said Dr. Chancellor.

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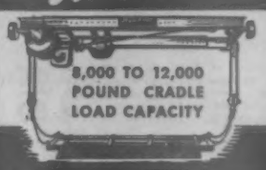

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NEW OFFICERS—North Carolina Feed Manufacturers Assn. members elected new officers at the recent meeting of the group in conjunction with the North Carolina Animal Nutrition Conference at North Carolina State College. From the left, above, are: D. H. Taylor, Kinston, new president; Jim Westall, Asheville, new vice president; McNair Evans, Laurinburg, reelected secretary-treasurer, and A. M. Upshaw, Mocksville, outgoing president. Mr. Taylor is president of Leco Feed Mills, Kinston. Mr. Westall is vice president of Earle-Chesterfield Mill Co., Asheville, and Mr. Evans is president of Laurinburg (N.C.) Milling Co.

NORTH CAROLINA

(Continued from page 1)

president, and McNair Evans, Laurinburg (N.C.) Milling Co., secretary-treasurer.

Named to the board of directors were: B. A. Fretwell, Spartan Grain & Mill Co., Spartanburg, S.C.; Tom Cameron, Upchurch Milling Co., Raeford, and G. B. DeLoatche, Central Carolina Farmers Exchange, Durham.

A complete report of the Animal Nutrition Conference will appear in next week's Feedstuffs.

CONTRACT

(Continued from page 1)

leaflet, states: "Feed manufacturers are, of course, free to use any form of contract they may choose. However, it is believed to be in the best interests of the feeder, feed dealer and manufacturer to use the Model Sales Contract and to follow the provisions of the National Feed Merchandising Plan" (mailed to AFMA members in July, 1959).

Mr. Glennon said copies of the model contract and the merchandising plan booklet (which deals with feed booking) are available to all members of the feed industry. Requests should be addressed to: American Feed Manufacturers Assn., 53 W. Jackson Blvd., Chicago 4, Ill.

The model contract's foreword also says: "In the past, longer-term bookings of feed, price guarantees and meaningless contracts have sometimes created false and misleading market levels, bred ill-will between feeder, dealer and manufacturer and caused repudiation of contractual obligations to the detriment of both buyer and seller.

"It appears to be in the best interests of both buyer and seller that a sales contract be used which clearly specifies the rights and responsibilities of both parties."

The contract recommended by AFMA is a "firm price" contract and is not guaranteed against market decline. Other terms and conditions of the model contract, briefly stated, include the following:

—The manufacturer or seller warrants that products contracted will be representative of the brand or grade specified, but he does not warrant results from the use of his products "because many factors may affect the growth, health and production of animals."

—The buyer waives any claim or defense based on the quality of the products unless the seller is notified in writing of any complaint within 10 days after the buyer learns of any defect warranting the complaint.

—The buyer must furnish final shipping instructions for each quantity specified in the contract at least two weeks prior to the expiration of the delivery period specified. However, the seller won't be required to ship during the last two weeks of a specified delivery period more than one fourth of the total tonnage contracted for that period.

—If the financial condition of the buyer becomes impaired or is found to be such that credit terms specified are unsatisfactory to the seller, the seller may require the buyer to pay cash in advance of shipment.

—Changes in taxes or assessments imposed upon the manufacturing, processing, distribution, sales or use of feed or changes in transportation costs between the contract date and delivery date shall be added to or subtracted from prices stipulated in the contract.

—The buyer may modify the product form, type of packaging or mode of transportation, if requested in writing and if the seller can conveniently make the substitution. If any such change is agreed upon by the buyer and seller, the contract price of the product will be modified accordingly.

Other provisions of the model contract concern legal action which may be taken by one party if the other defaults.

Ohio Xmas Party

CINCINNATI—The annual Christmas party of the Cincinnati Feed Club will be held Dec. 12 at Shuller's Wigwam restaurant. The program includes turkey dinner and dancing to the music of a six-piece orchestra. Harley Aylor of the John F. Young Co. is arrangements chairman.

SAN FRANCISCO PARTY

SAN FRANCISCO—The San Francisco Grain Exchange is holding its annual Christmas party Dec. 16, from 4 to 8 p.m., on the exchange floor, in the Merchant Exchange building.

BARLEY

(Continued from page 1)

lights from the Feeder Day, which was attended by ranchers, feeders, feed companies, feed processing equipment representatives, university specialists, meat packers, livestock marketing agencies, transportation firms, and chambers of commerce:

"Our latest count shows 82 barley rolling mills have been installed in North Dakota in the past year or so," said George Strum, NDSU beef specialist. "This includes both dry and steam rolling units. We know there are still more being planned."

Feed Firms

One Fargo feed company representative explained that some of the rolling units being installed are used ones brought in from Montana, where larger-capacity mills are being installed. "The expansion of barley rolling in Montana has been going on at almost a stampede pace," he added.

The Fargo-based firm of R. F. Gunkelman & Sons is building a new feedlot at Grandin, where the company is expanding present elevator, feed and specialty-seed processing facilities to include a barley steam rolling mill and pelleting setup. The feedlot is planned for 3,000 head, and will handle the company's own cattle as well as feeding for others on a custom basis. The cattle will get complete, pelleted rations in self-feeders. Some cattle are on feed now. Even before the feedlot is in full operation, Gunkelman's has had inquiries from farmers and others who want to place cattle in the new lot.

A Minnesota feed company representative at the Feeder Day also reported his firm's plan to build its own feedlot "on a scale considerably larger than experimental size."

It was reported also that an increasing amount of barley is being graded in North Dakota and northwestern Minnesota. The lower quality barley and by-products stay in the area for feeding and other uses, while in some cases the top quality malting and distilling barley is moving directly to Duluth. This results in the Twin Cities being bypassed.

Meanwhile, the expansion in cattle feeding has stepped up the demand for better information on feeding methods, equipment and, in particular, greater numbers of cattle suitable for placing on feed. One West Fargo area feeder, with 1,000 head in his lots, noted that feeders to refill his pens are becoming especially scarce during the winter months.

Barley Rolling

Some indication of the progress in barley feeding experience was provided during the feeder clinic by Mike Murray, Murphy & Murray Feedlot, Reynolds, N.D., who reported that steam-rolled barley has been putting better gains on his cattle than the dry-rolled form. He noted that feed conversion on one group of cattle fed steam-rolled barley had run 7.01 lb. feed per pound of gain, with 2.97 lb. daily gain; those on dry-rolled had converted at 8.51 lb. feed per pound of gain, and daily gains of just over 2.5 lb. He added that 1 lb. of 20% protein supplement, fortified with a "double load" of vitamin A, has performed best for him to date. The feedlot has fed well over 1,000 head of cattle on straight barley rations this year. Death loss of cattle has been lower with barley rations than on those previously used, and no discrimination against his barley-fed cattle has been made by market agencies to date. Mr. Murray also pointed out the importance of using supplemental vitamin A in barley and beet pulp rations, "since neither of these ingredients has its own supply of 'A'."

Bill Sinner, Sinner & Bresnahan Feedlot, just west of Fargo, reported considerable success in using beet pulp at levels up to 37% (molasses beet pulp). They find cattle can be brought on full feed within a week, provided the cattle have had some grain previously, by capitalizing on the bulk provided by the beet pulp. Plenty of phosphorus, in the form of steamed bone meal, is required with heavy pulp rations, he added.

TOP OF THE HOPPER

(Continued from page 2)

spoke up as follows: "Farm legislation calls for warm hearts and cool heads . . . While it is theoretically not impossible to control the output of 4 million farms by comprehensive control of land and capital inputs, I hold it politically inconceivable that the American people, particularly the farmers, would ever accept the degree of regimentation and law enforcement that would be necessary to execute such control. It is moreover questionable whether the total cost involved for the nation would not by far exceed the exorbitant ones of the present price stabilization. Compulsory supply controls create by definition immediately illegal units of supply, i.e., a black market. To make it effective such control would have to ration all purchased inputs, such as fuel, fertilizer, machinery."

Dr. Brandt went on to show how controls spread and breed more controls. "If supply control should approach effectiveness, it would require extension to the industries which compete with farm production. Beyond that it seems fantastic to believe that in an integrated, dynamic economy the conversion of a primary industry like agriculture into a politically directed state monopoly could stop there. Total cartelization of agriculture is only the beginning of total cartelization of the industries."

No doubt President-elect Kennedy, his farm economics advisors and the congressional quarterbacks who will be charged with running his legislative program will hear many strongly-worded arguments from those who recognize the value of free markets. How effectively these arguments are stated and made meaningful to the administration and to those who determine legislative results can have a great influence on the future of the farm program despite promises, planks and attitudes expressed during the campaign. Yet, the uncertainties facing the feed industry in the farm program remain very real and perplexing.

SOME TIME AGO a leading poultry authority predicted that within five years the "chickens (meaning poultry industry operators of various types) would own the feed mills or the feed mills would own the chickens"—that there would be no in-between in the poultry industry, that all operations would be completely integrated. A man in the trade recorded the prediction and the date, planning to see just how it worked out. Now this industry man, who has made observations over wide areas, says he feels that the prediction may be conservative. Also, he calls attention to reports that some feed companies, perhaps working through investments in related firms, are acquiring more land or facilities for their own poultry operations.

EXPRESSION OF FEED EFFICIENCY in terms of Calories to gain rather than feed to gain would be a sounder method, some scientists feel. For one thing, they say, it would be a better way to compare feeding experiments in different locations and conditions. However, it is pointed out, it still is a relative thing.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
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A AND D FEEDING OIL

Boston: Demand and supply steady; 400 D, 3,000 A 19½¢ lb.; 300 D, 3,000 A 19¢; 200 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 21¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15¾¢ lb.

Denver: Demand slow; trend steady; supply ample; 21¢ lb.

ALFALFA MEAL

Boston: Demand good; supply adequate; dehydrated, 17% $60@63; suncured, 13% $46.60, sacked.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $61.

Portland: Demand good; trend higher; supply adequate; $47@72, sacked.

Ft. Worth: Demand fair; supply sufficient; dehydrated, 17%, 100,000 A $57.10, sacked, truck or rail; suncured: 13% ¼-in. grind, No. 1 $48, truck; 15% fine ground, dry $50, with 2% fat added $52, rail or truck, all sacked.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $55@56.

Philadelphia: Demand and supply fair; 17% dehydrated $63.25.

Omaha: Demand slow; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $45; sacked meal $50; Omaha basis.

Los Angeles: Demand moderate; trend unchanged; supply ample; dehydrated meal, 17% protein, 100,000 A $51.50@52; dehydrated pellet meal, 17% protein, 100,000 A $53@54; suncured meal, 15% protein $45@46; suncured crumbles, 15% protein $47@48.

Minneapolis: Supply ample; demand fair to good; no change in price; 17% dehydrated, 100,000 A units, reground pellets steady at $51, delivered Minneapolis; oiled reground pellets $53.

Chicago: Demand quiet; trend easier; supply ample; dehydrated, 17% protein, 100,000 units vitamin A $48.

St. Louis: Demand slow; trend steady; supply limited; suncured, 13% fine, sacked $48; dehydrated, 17%, 100,000 A pellets, demand fair, trend easy, supply ample, bulk $48.

Kansas City: Demand fair; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $46@48, reground pellets $48@49; 15% dehydrated alfalfa, 125,000 A on arrival, pellets $48@51, reground pellets $49@52; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $50@54, reground pellets $51@53; suncured alfalfa, demand improved, supply adequate, 13% pellets $35@37; No. 1 ¼-in. $40, sacked.

Buffalo: Demand and supply fair; trend steady to higher; $52.60, sacked, Boston.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $51, 150,000 A unit dehydrated $72, both delivered truck loads, sacked.

Denver: Demand fair; trend steady; supply ample; $47.

ANIMAL FAT (STABILIZED)

Louisville: Demand fair; trend steady; supply good; white tallow 6¢ lb., bleachable white 5¾¢ lb., yellow grease 5½¢ lb., all in tank car lots.

Boston: Demand and supply steady; tallow 5¢ lb.; yellow grease 5¢ lb.

Ogden: Supply good; $5.75 cwt.

Ft. Worth: Demand good; supply sufficient; prime tallow, tank cars 5¾¢ lb., drums 7¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

San Francisco: Demand fair; supply ample; bleachable fancy 6¼¢ lb., yellow grease 4¾¢ lb.

St. Paul: Softer market; demand fair, but better than year ago at this time; supply adequate; bleachable fancy down ¼¢ to 5¾¢ lb.

Chicago: Demand good; trend steady; supply fair; tank truck or carlots, bleachable fancy tallow $5.87½ cwt., yellow grease $3 cwt.

Kansas City: Demand slow; trend weak; supply ample; stabilized prime tallow 5@5¼¢ lb.

Salisbury, Md.: Demand excellent; supply limited; 5½¢ lb., f.o.b.

BARLEY FEED

Philadelphia: Demand slow; supply fair; $41.50.

Los Angeles: Demand slow; trend steady; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Ogden: Supply good; rolled $45@46; whole $40@41.

Boston: Demand slow; supply light; $46, sacked.

San Francisco: Demand fair; supply ample; rolled $58, ground $57.

Baltimore: Demand and supply fair; trend firm; $43.50, sacked.

Chicago: Demand fair; supply adequate; trend unchanged; $33, sacked.

Seattle: Demand and supply good; trend steady; $45, truck lots.

Denver: Demand fair; trend steady; supply ample; $2.10 bulk, $2.30 sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

Denver: Demand fair; trend steady; supply good; $24.50.

BLOOD FLOUR

Louisville: Demand fair to good; trend strong; supply fair; $30@35, up $5, sacked.

BLOOD MEAL

Louisville: Demand fair to good; trend strong; supply good; $30@35, up $5, sacked.

Ogden: Supply ample; $32.50.

Omaha: Demand strong; trend improving; supply fair; 80% $35, sacked, Omaha.

Portland: Demand fair; trend steady; supply adequate; $95@100, sacked.

Los Angeles: Demand slow; trend steady; supply moderate; $5.50 a unit of ammonia, sacked.

San Francisco: Demand and supply fair; $4.75 a unit of ammonia, sacked.

Chicago: Demand quiet; trend firm; supply ample; 80% protein $110, sacked.

BONE MEAL (STEAMED)

Boston: Demand and supply steady; $100.

Ft. Worth: Demand good; supply sufficient; $100, sacked, f.o.b. Ft. Worth, .local manufacture.

Louisville: Demand fair; trend strong; supply light; $30@35, sacked, up $5.

Los Angeles: Demand fair; trend steady; supply adequate; imported $30.75, $6 ton lots, sacked.

Cincinnati: Demand good; trend stronger; supply fair; $90, sacked, Cincinnati.

Portland: Demand fair; supply adequate; trend unchanged; $95@97.50, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Chicago: Demand and supply fair; trend firm; $90, sacked.

Buffalo: Demand fair; trend strong; supply steady; $97, sacked.

Seattle: Demand good; trend firm; supply limited; $92, sacked, f.o.b. car Seattle.

Denver: Demand fair; trend steady; supply ample; $112.50.

BREWERS DRIED GRAINS

Los Angeles: Demand and trend steady; supply adequate; $51.

Philadelphia: Demand and supply fair; $60.

Cincinnati: Demand poor; trend steady; supply adequate; $54.

Boston: Demand active; supply spotty; 26% $60.60.

Ft. Worth: Demand moderate; supply limited; 26% protein $61.90, sacked.

Louisville: Demand good; trend steady; supply reasonable; $59, sacked, trying to follow distillers dried grains, up $1.

San Francisco: Demand fair; supply ample; $51, sacked.

St. Louis: Demand good; trend firm; supply limited; $51.

Chicago: Demand fair; trend higher; supply light; 26% protein $48.

Buffalo: Demand fair; trend higher; supply fair to poor; $61.60, Boston.

BREWERS DRIED YEAST

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

Portland: Demand fair; supply adequate; trend unchanged; 11@12¢ lb.

Boston: Demand and supply steady; 11¢ lb.

Omaha: Demand fair; trend improving; supply plentiful; 10¢ lb.

Louisville: Demand slow; supply good; trend steady; 10@10½¢ lb.

Los Angeles: Demand good; trend unchanged; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb., ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Buffalo: Demand fair; trend steady; supply ample; $9.15 cwt.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Denver: Demand good; trend steady; supply ample; 9¢ lb.

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

BUTTERMILK (CONDENSED)

Louisville: Demand dull; trend steady; supply nil; $4.75 cwt. in paper drums.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Boston: Demand and supply steady; 4¼¢ lb.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

Ogden: Supply ample; $4.40 cwt., drum.

Chicago: Demand and supply fair; trend steady; 500 lb. barrels $3.25@3.50 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Los Angeles: Demand fair; trend steady; supply adequate; flour $10.15, 20 ton cars; meal $11.15, 20 ton cars; both sacked.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $12.75; 100 lb. bags $12; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse.

CHARCOAL

Boston: Demand slow; supply light; granular No. 6 $110.

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry; $156, less than ton lots; $144.40, ton lots; both sacked.

San Francisco: Demand steady; supply ample; $141, sacked.

Chicago: Demand fair; trend firm; supply fair; $9 lb. multiwalls $110.

COCONUT OIL MEAL

Portland: Demand slow; trend easier; supply adequate; $61.50.

Los Angeles: Demand moderate; trend unchanged; supply ample; copra cake $63, December-January.

San Francisco: Demand fair; supply ample; solvent $52; expeller $69.

Seattle: Demand fair; trend steady; supply ample; solvent type $68, f.o.b. car Seattle, sacked.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 300 D, 3,000 A 20¢ lb.; 600 D, 2,250 A 18½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Boston: Demand quiet; supply ample; $37.50@40.

Los Angeles: Demand and trend steady; supply adequate; 2¢ lb.

Denver: Demand fair; trend steady; supply ample; 3¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $3 more)

Minneapolis: Feed $47.60, meal $62.60.
Atlanta: Feed $51, meal $66.
Birmingham: Feed $49.60, meal $64.60.
Boston: Feed $52.50, meal $67.50.
Chicago: Feed $41, meal $56.
Cleveland: Feed $48.90, meal $63.90.
Denver: Feed $51.20, meal $66.20.
Ft. Worth: Feed $49.70, meal $64.70.
Indianapolis: Feed $46.20, meal $61.20.
Kansas City: Feed $41, meal $56.
Louisville: Feed $48.60, meal $62.60.
New Orleans: Feed $50.90, meal $65.90.
New York: Feed $52.10, meal $67.10.
Norfolk: Feed $51.50, meal $66.50.
Philadelphia: Feed $51.70, meal $66.70.
St. Louis: Feed $41, meal $56.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $45.

Louisville: Demand dull; trend steady; supply light; $53.55, sacked.

Seattle: Demand good; trend steady; supply ample; $49.50, car or truck.

COTTONSEED OIL MEAL

Boston: Demand slow; supply light; 41% $69.50, sacked.

Louisville: Demand fair; trend fairly steady; supply good; old process $61.60, unchanged; new process $59.60, up $1; both sacked.

Los Angeles: Demand fair; trend steady; supply moderate; $54.

Philadelphia: Demand slow; supply light; $65, 30 ton cars.

Ft. Worth: Demand good; supply sufficient; 41% old process $61, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added, $56.50 December, delivered Ft. Worth; pellets $2 additional; hulls $19.

Memphis: Demand fair; trend steady; supply ample; prime 41% protein, old process $52, new process, 41% solvent $49.

Portland: Demand fair; trend steady; supply adequate; $61.20.

Cincinnati: Demand poor; trend steady; supply adequate; $56.

Wichita: Demand fair; supply ample; 41% old process $68, sacked.

Omaha: Demand fair; trend strong; supply ample; 41% solvent $57.70, delivered Omaha.

Ogden: Supply ample; 41% $61@63.

San Francisco: Demand fair; supply ample; 41% $57; solvent 44% $58.

Chicago: Demand fair; trend steady; supply adequate; Memphis basis, hydraulic $53.

Kansas City: Demand slow; trend steady; supply ample; 41% old process $52.50@53; solvent process $49@49.50, Memphis.

St. Louis: Demand slow; trend steady; supply ample; solvent $53.

Buffalo: Demand fair to poor; trend steady; supply adequate; $74, sacked, Boston.

Seattle: Demand fair; trend steady; supply ample; $66, f.o.b. car Seattle.

Denver: Demand fair; trend steady; supply ample; $59.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9⅝¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $71.35 bulk.

Portland: Demand fair; supply ample; trend steady; $93.50@95 for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.01% fluorine; $93@93.50 dock for minimum of 10 ton lots.

Cincinnati: 18% phosphorus $74.30 in carloads, $84.30 in ton loads; 14% phosphorus $62.50 in carloads, $72.50 in ton loads, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in carloads or truck loads; $96 bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $33; 20,000 lb. or more $36 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $31 (or $4.38 a unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Denver: Demand good; trend steady; supply ample; $88.50, delivered, carloads.

Cincinnati: 18½% phosphorus $88.80, bagged, in carloads; $98.70, bagged, in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

DISTILLERS DRIED GRAINS

Boston: Demand active; supply very tight; dark $67 nominal, light $66.75.

Cincinnati: Demand fair; trend steady; supply adequate; $62.

Philadelphia: Demand fair; supply light; $67.25.

Louisville: Demand fair; trend steady; supply light; price advance has slowed down demand; production light; bourbon grains: light $60@61, dark $61@62, solubles $73, all sacked.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Buffalo: Demand good; trend steady to higher; supply fair to poor; $67, Boston.

Seattle: Demand fair; trend firm; none available; no quotations.

DRIED BEET PULP

Los Angeles: Demand good; trend steady;

supply moderate; $49.90.

Ft. Worth: Demand slow; supply sufficient; plain $59.25, sacked, 50 lb. bags, first half December.

Boston: Demand slow; supply improved; $56.50.

Ogden: Supply good; $39@45.

Portland: Demand good; trend steady; supply adequate; $48.60, sacked.

San Francisco: Demand good; supply fair; $44.80.

Buffalo: Demand and supply fair; trend steady to higher; $57.50, sacked, Boston.

Seattle: Demand good; trend steady; supply ample; $49, sacked, delivered carlots.

Denver: Demand slow; trend steady; supply ample; $62.50, f.o.b.

DRIED BUTTERMILK

Los Angeles: Demand fair; trend steady; supply adequate; 13¾@14¢ lb., sacked.

Boston: Demand light; supply short; 14¢ lb.

Louisville: Demand dull; trend steady; supply ample; 13@13½¢ lb., sacked.

Ogden: Supply ample; $17.25 cwt.

San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.

Chicago: Demand slow; trend steady; supply fair; medium acid $11.50@12 cwt., sweet cream $11.50@12 cwt., both sacked.

Buffalo: Demand fair; trend steady; supply limited; $12.65 cwt.

DRIED CITRUS PULP

Boston: Demand good; supply improving; $47.50, f.o.b. Florida.

San Francisco: Demand and supply fair; meal $48, sacked.

Buffalo: Too scarce to quote.

DRIED SKIM MILK

Philadelphia: Demand slow; supply fair; $13 cwt.

Louisville: Demand slow; trend steady; supply light; 12@13¢ lb., sacked.

Omaha: Demand good; trend strong; supply short; 12¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Ogden: Supply normal; $15.15 cwt., sacked.

Boston: Demand good; supply scarce; 13¢ lb., nominal.

Los Angeles: Demand slow; trend unchanged; supply adequate; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots; both sacked.

San Francisco: Demand and supply fair; 14½¢ lb., sacked.

Minneapolis: No shortage of supplies, but market holding firm; no change from last week; $12.25@12.50 cwt.

Chicago: Demand quiet; trend easier; supply fair; $11.25@11.50 cwt., sacked.

Buffalo: Demand fair; trend steady; supply ample; $13.35 cwt.

DRIED WHEY

Louisville: Demand dull; trend steady; supply light; 6@6½¢ lb., sacked.

Boston: Demand and supply good; 5¾@5½¢ lb.

Portland: Demand fair; trend steady; supply adequate; $5.60 cwt., sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.

Omaha: Demand good; trend strong; supply good; $5.50 cwt.

Philadelphia: Demand slow; supply fair; $6.25 cwt.

Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.

Ft. Worth: Demand fair; supply adequate; carlots, standard $5.25, sacked, delivered Ft. Worth; ton lots $5.50, f.o.b. warehouse Ft. Worth.

Ogden: Supply ample; $6.90 cwt., sacked.

San Francisco: Demand steady; supply good; $5.25 cwt., sacked.

Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.25 cwt., sacked.

Minneapolis: Demand good; more supplies available, but no price change, same as last week $5.50 cwt.

Chicago: Demand slow; trend unchanged; supply ample; $4.85 cwt., sacked.

Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.

Denver: Demand slow; trend steady; supply ample; $5.25, delivered truck.

FEATHER MEAL (HYDROLYZED)

Boston: Demand slow; supply ample; $65.

Ft. Worth: Demand slow; supply sufficient; exporters have taken some of excess supplies; 85% protein $61@63 bulk, $63.50 @65.50 sacked, delivered Ft. Worth.

Los Angeles: Demand and trend steady; supply adequate; 90¢ a unit of protein, sacked.

Salisbury, Md.: Demand spotty; supply ample; $62, f.o.b.

FISH MEAL

Los Angeles: Demand slow; trend easier; supply adequate; local production, 60% protein $1.45 a unit, sacked.

Omaha: Demand good; trend improving; supply plentiful; 60% menhaden $105, f.o.b. Omaha.

Ft. Worth: Demand fair; supply sufficient; sacked; 65% protein Peruvian $92.50, December; 60% protein menhaden $99, delivered Ft. Worth.

Portland: Demand good; trend steady; supply ample; $1.50 a protein unit, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $108.60.

Boston: Demand spotty; supply ample; 60% menhaden $90.

Louisville: Demand dull; trend steady; supply light; $106@110, delivered, sacked.

Ogden: Supply good; $1.05 a unit, f.o.b. Coast; 65% $105@108.

San Francisco: Demand slow; supply ample; $1.40 a unit of protein.

Minneapolis: Demand fair; supply ample; prices about the same as last week; West Coast 60% blended $113, sacked, delivered; Canadian herring $1.40 a unit, West Coast, subject to production.

Chicago: Demand poor; supply ample; trend easier; sacked: menhaden, East Coast $88@90, Gulf $86@90; menhaden scrap, East Coast $84@86, Gulf $82@86; Canadian herring meal $1.35 a unit of protein.

Buffalo: Demand fair; trend steady; supply ample; 60% protein menhaden $103 bulk, $108 sacked.

Seattle: Demand and supply good; trend weak; $1.40 a unit protein, f.o.b. truck, Vancouver, B.C. (Canadian production).

Denver: Demand good; supply tight; $1.65 a protein unit, Vancouver, f.o.b.

HAY

Cincinnati: Demand slow; trend steady; supply adequate; second cutting alfalfa $35; No. 1 timothy $25; No. 1 timothy and clover, mixed $30; No. 1 red clover $30; straw $18.

Wichita: Demand good; supply sufficient; prairie $22@25, alfalfa $28@30, baled.

Louisville: Demand slow; trend steady; supply good; local hay, all varieties: No. 1 $28@30, No. 2 $26@28; straw $18@20.

Boston: Demand quiet; supply steady; No. 1 timothy $39@42.

Portland: Demand improved; trend barely steady; supply plentiful; No. 2 green $30@36, baled, Portland-Seattle.

Philadelphia: Demand slow; supply light; $25.50.

Ft. Worth: Demand fair for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $42@44, No. 2 $40@42; No. 2 prairie, nominal $30 @32; No. 2 Johnson, nominal $38@30, delivered Texas common points.

Los Angeles: Demand slow; trend unchanged; supply ample; U.S. No. 1 $33@35, U.S. No. 2 leafy $29.50@31, U.S. No. 2 green $31@32, U.S. No. 2 $27@28.

Ogden: Supply good; $25 ton in the barn.

Seattle: Demand good; trend firm; supply fair; alfalfa, U.S. No. 2 green $37, baled, delivered truck lots.

HOMINY FEEDS

Memphis: Demand poor; trend steady; supply ample; white $40.50, yellow $40.50.

Boston: Demand slow; supply ample; domestic, bulk $48.50; Canadian, sacked $51.50.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $40.

Louisville: Demand dull; trend weak; supply light; $45, sacked, down $3.

St. Louis: Demand fair; trend steady; supply ample; yellow $37.50.

Kansas City: Demand good; trend stronger; supply tight; white or yellow $33@33.50.

Chicago: Demand moderate; supply fair; trend steady; $39.

Buffalo: Demand fair; trend higher; supply fair to poor; $49.50, Boston.

Seattle: Demand good; trend easy; supply limited; $49, sacked, delivered carlots.

LINSEED OIL MEAL

Louisville: Demand dull; trend weak; supply ample; old process $78.50, down 40¢; new process $71.50, down 40¢; both sacked.

Wichita: Demand fair; supply ample; 34% $75, sacked.

Philadelphia: Demand and supply fair; 34% $70.

Boston: Demand slow; supply light; $70.20.

Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $69, December.

Cincinnati: Demand poor; trend steady; supply adequate; new process $53.50, old process $69, Minneapolis.

Portland: Demand slow; trend firm; supply plentiful; $84.50, sacked.

Omaha: Demand fair; trend strong; supply tight; 34% solvent $58.80, old process $64.30, Omaha basis.

Los Angeles: Demand slow; trend unchanged; supply small; local production, 31% protein $71.

San Francisco: Demand fair; supply ample; $70.

Minneapolis: Steady market; solvent $53, expeller $58.50.

Chicago: Demand fair; trend steady to easier; supply ample; Minneapolis basis: solvent $52.50, expeller $58.

Kansas City: Demand improved; trend steady; supply ample; solvent process $52.50 @53, old process $58@58.50, Minneapolis.

Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $85, delivered carloads, sacked.

Denver: Demand fair; trend steady; supply ample; $71.50, sacked.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; supply plentiful; 65% $175, sacked, Omaha.

MALT SPROUTS

Boston: Demand and supply limited; $48, nominal.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $44.

Chicago: Demand fair; trend higher; supply light; No. 1 uneven bags $44, sacked.

MEAT AND BONE MEAL

St. Louis: Demand fair; trend steady; supply ample; $65.

Buffalo: Demand good; trend steady; supply light; 50% meat scraps $72.50 bulk, $77.50 sacked.

Kansas City: Demand fair; trend firm; supply tight; 50% $67.50@68.50.

Boston: Demand and supply steady; $1 a protein unit; converted 50% $62.50.

Cincinnati: Demand good; trend strong; supply fair; 50% meat and bone scraps $68.50, Cincinnati.

Ft. Worth: Demand improving; supply sufficient; meat and bone, 50% $64@65 bulk, $67@68 sacked, f.o.b. Ft. Worth.

Portland: Demand good; trend firmer; supply tighter; $72.50@75, sacked.

Los Angeles: Demand steady; trend unchanged; supply ample; 50% protein $1.40 a unit.

Wichita: Demand heavy; supply about offsets demand; 50% $80, sacked, f.o.b. plant.

Omaha: Demand strong; trend stronger; supply fair; $70.

Louisville: Demand fair; trend strong; supply good; $80@85, sacked, up $5.

Ogden: Supply normal; $70, 50% protein, sacked.

San Francisco: Demand fair; supply ample; $1.40 a unit of protein.

Chicago: Demand quiet; trend steady; supply adequate; 50% protein $72.50, sacked.

St. Paul: Very good demand; much improved over week ago; supply adequate; kill slowing up at packing plants; price $3@7 stronger than last week.

Seattle: Demand good; trend steady; supply ample; $1.50 a unit protein, ex-processing plant, sacked.

Denver: Demand fair; trend steady; supply ample; $60.

MILLFEED

Minneapolis: Prices continue to climb, mostly $1 stronger than week ago; demand greatly improved; flour mill production about steady; bran up 50¢ from last week to $40.50, sacked; middlings up $2 to $39.50, sacked; red dog up $2 to $43, sacked.

Kansas City: Demand good; trend firm; supply tight; sacked bran $37.50@38, shorts $37.50@38; bulk bran $33@33.50, shorts $34@34.50, middlings $34@34.50.

Wichita: Demand good; supply adequate; Dec. 5 basis Kansas City: bran $35.75@36.25, shorts $35@35.50, sacked; bran advanced $1 and shorts $1.25, compared with the preceding week; bulk middlings $31@31.50, up $3, on a fairly good demand.

Ft. Worth: Demand good; offerings limited for immediate shipment; bran bulk $41.50, burlaps $45; gray shorts bulk $43, burlaps $45; bulk middlings $43, delivered Texas common points; bran and shorts $1 @2.50 higher, middlings $5.50 higher, compared with previous week.

Chicago: Demand good; trend higher for bran and middlings, steady on red dog; supply lighter; standard bran $37.50@38, standard midds. $38.50@39, red dog $41.

St. Louis: Demand good; trend firm; supply ample; sacked bran $42.50, shorts $42.50; bulk bran $38, middlings $39.

Omaha: Demand good; trend strong; supply tight; sacked bran $38; sacked gray shorts $37.50; bulk standard midds. $34.50; all Omaha basis.

Cincinnati: Demand fair; trend higher; supply adequate; bran $42, middlings $42.

Boston: Demand improved; supply adequate; bran $47, middlings $50.60.

Buffalo: Bran was king in millfeed market last week, buying for replacement only, but enough of it, plus curtailed supplies resulting from reduced flour production, to send prices sharply higher; mixers' business steady, and because bran is well-priced, they will utilize it 100%; levels here even to within 50¢ of all competition; sacked differential on bran and middlings steady at $5.50; bran ended $4 higher; middlings and red dog up $3; quotations Dec. 7: bulk bran $41.50@42, sacked $47 @47.50; bulk middlings $41.50@42, sacked $47@47.50; bulk red dog $43@47, sacked $47.50@48.

Philadelphia: Demand slow; trend unsettled; supply fair; bran $47.50, standard midds. $47.50, red dog $48.50.

Memphis: Demand fair; trend steady to higher; supply ample; wheat bran $39.80, gray shorts $40.80, standard midds. $39.80.

Louisville: Demand fair to good; trend strong; supply good; bran $45.80, up $1; mixed feed $45.95, up $1; shorts $46.55, up $1.25; all sacked.

Denver: Demand fair; trend steady; supply limited; shorts $40.75, bran $40.75, millrun $40.75.

Seattle: Demand fair; trend steady; supply ample; $37, delivered common transit points, carlots.

Portland: Demand good; trend higher; supply tight; $37@38.

Ogden: Supply good; to Utah: red bran and millrun $38, middlings $43.

Los Angeles: Demand slow; trend firmer; supply adequate; standard mill run $47@47.50; red bran $50@51.

San Francisco: Demand good; supply fair; millfeed $46, red bran $49.

MINERAL FEED

Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 8% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules at $87, phosphorus 1% $77 (all in 50 lb. paper bags).

Portland: Demand fair; supply adequate; trend steady; $44@45.

Wichita: Demand heavy; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.

Ogden: Supply normal; $113 ton in 50 lb. blocks; $102 ton, granular, 50 lb. bags.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, all-purpose mineral $85, both ex-warehouse, sacked.

MOLASSES

Los Angeles: Demand good; trend steady; supply adequate; $22.50, f.o.b. tank cars; $22.75, f.o.b. tank trucks.

Boston: Demand and supply steady; 14¢ gal. in tank cars.

Louisville: Demand fair; trend steady; supply normal; 13¢ gal., tank car lots, f.o.b. Gulf ports.

Memphis: Demand fair to good; trend steady to higher; supply ample; blackstrap 13@13¼¢ gal., tank car, f.o.b. New Orleans, and $29.50 ton, delivered Memphis, truck.

Buffalo: Demand and supply fair; trend steady; 15¢ gal., f.o.b. Albany.

Kansas City: Demand fair; trend strong; supply available; blackstrap 13@13½¢ gal., f.o.b. New Orleans.

St. Louis: Demand slow; trend steady; supply adequate; 13½¢ gal., tank car, New Orleans.

Minneapolis: Prices unchanged from last week; blackstrap $33, tank truck, delivered; beet $30; blend $31.50.

Ft. Worth: Demand good; supply sufficient; blackstrap 13½¢ gal., f.o.b. Houston; delivered Ft. Worth truck $29.78, seller's market price on date of shipment.

Cincinnati: Demand fair; trend steady; supply adequate; 13¢ gal., New Orleans.

San Francisco: Demand and supply good; $24.50 ton, f.o.b. cars Richmond, Cal.

Seattle: Demand and supply good; trend firm; $24.75, f.o.b. Seattle, tank truck lots.

Denver: Demand good; trend steady; supply ample; 13¢ gal., New Orleans; $37.43 ton, Denver.

OAT PRODUCTS

Minneapolis: Stronger oat market has kept prices climbing; feeding rolled up $2 to $74, sacked; feeding oatmeal up $1.50 to $63, sacked; pulverized steady at $41, sacked; crimped up $1 to $59, sacked; reground still nominal $24, sacked.

Louisville: Demand fair; trend steady; supply ample; reground $30.40, up $1; rolled oats $78.90; feeding oatmeal $74.40; pulverized white $49.90; crimped white $63.40, all sacked.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $44 @48.

Boston: Demand slow; supply good; white pulverized, sacked $52; reground oat feed $25.50.

Memphis: Demand fair; trend steady; supply light; 3¼% protein, reground oat feed $29.80.

Chicago: Demand quiet; trend steady; supply ample; reground oat feed $20, No. 1 fine ground feeding oatmeal $70, feeding rolled oats $74.

Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $43.20; reground $31.80, sacked.

Philadelphia: Pulverized white, demand slow, supply fair $46.80; domestic, demand slow, supply light $29; Canadian oat feed, demand fair, supply light $33, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; local production, pulverized $67, sacked.

Seattle: Demand and supply fair; trend steady; 32 lb. or better $57, delivered truck lots.

OYSTER SHELL

Los Angeles: Demand fair; trend unchanged; supply adequate; $3.65, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 50 lb. bags $23.85, 80 lb. bags $24.10, 25 lb. bags $26.35.

Boston: Demand and supply steady; in paper $26.52.

Portland: Demand ample; trend unchanged; $27.50@35.

Louisville: Demand fair; trend steady; supply good; in 80 lb. paper sacks $23.95; in 50 lb. paper sacks $24.20; in 25 lb. paper sacks $26.45.

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

Seattle: Demand and trend steady; supply good; eastern $36, delivered carlots, sacked.

PEAT MOSS

Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.

Portland: Demand slow; supply ample; trend unchanged; $3@3.15 per 5.6 cu. ft. bale.

Boston: Demand and supply steady; $3.15 bale in carlots.

Philadelphia: Demand slow; supply fair; $2.35 a bale, f.o.b. pier.

Cincinnati: Demand and supply good; trend steady; truck loads $3.45 a bale, f.o.b. Cincinnati.

San Francisco: Demand and supply fair; $3.65 a bale.

Seattle: Demand poor; trend steady; supply good; $2.60 a bale, delivered truck lots.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blends: 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb.; delivered basis.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35, 200 lb. in 100 lb. drums $1.36, 100 lb. drums $1.38, 25 lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Boston: Demand good; supply light; $70, f.o.b. shipping points.

Los Angeles: Demand and trend steady; supply adequate; $1.20 a unit of protein, sacked.

Salisbury, Md.: Demand good; supply ample; $67, f.o.b.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots in 3.36 to 15 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good; supply moderate; rice bran $34@35, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; California production, high fat content, bran $49@50, sacked.

San Francisco: Demand good; supply ample; bran $40, sacked.

SCREENINGS

Minneapolis: All Canadian shipments by rail now; ships iced out; supplies limited in Canada; demand poor this week but expected to improve; $21 for December, $22 for January; no change in domestic ranges, supplies tight, lights $8@12, mediums $13 @20, heavies $21@30; 15% flax screenings up $1 from last week to $36.

Buffalo: Demand and supply fair; trend steady; ground, sacked $36.25, New York; unground, bulk $28.25, New York, $30, Canadian refuse $26.

Cincinnati: Demand good; trend steady; supply tight; unground grain screenings $24@25.

Chicago: Demand quiet; trend easier on reground, steady on refuse; ground grain

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUMS

Los Angeles: Demand good; trend firmer; supply not too plentiful; milo $2.10 cwt.

Ft. Worth: Demand fair; supply sufficient; No. 2 yellow milo $1.93@1.95 cwt., delivered Texas common points.

Ogden: Supply normal; milo $39@40.

Seattle: Demand and supply good; trend firm; $44, delivered carlots.

SOYBEAN OIL MEAL

Minneapolis: Demand very good; export business reported to have taken some surplus off domestic market; bean price stronger; 44% $2.50@3 better than week ago at $42.50@43, Decatur; 50% $3@3.50 higher at $47.50@48, Decatur.

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Los Angeles: Demand good; trend stronger; supply adequate; $68.60@69.60.

Omaha: Demand good; trend strong; supply tight; 44% $51.70, delivered Omaha.

Ft. Worth: Demand good; supply sufficient; 44% $55.20@55.60 December, $56.20@59 January; 50% $61.20@63.50 December, $62.20@64.50 January.

Cincinnati: Demand fair; trend higher; supply adequate; $49, Decatur.

Memphis: Demand fair; trend steady to higher; supply ample; prime 44% solvent $51.50, f.o.b. Memphis.

Chicago: Demand improved; trend higher; supply good; Decatur basis, 44% protein, unrestricted billing $48, ETL $44; 50% protein, unrestricted billing $51.50@53, ETL $48.50.

St. Louis: Demand fair; trend easy; supply ample; 44% $48.

Kansas City: Demand improved; trend stronger; supply adequate; 44% solvent process $45.50@46, Decatur.

Boston: Demand improved; supply adequate; 44% $43.50, 50% $47.50, both f.o.b. Decatur.

Louisville: Demand fair; trend strong; supply good; $57.70, up $2.50.

Philadelphia: Demand and supply fair; trend unsettled; 44% $45, Decatur.

Portland: Demand good; trend higher; supply tight; $68.60.

Wichita: Demand good; supply ample; 44% $58, 50% $64, sacked; 44% $54, 50% $60, bulk, f.o.b. Wichita.

Ogden: Supply good; 41% protein $68@69; 50% protein $73@74.

San Francisco: Demand fair; supply ample; $66.60.

Denver: Demand good; trend steady; supply ample; 44% $59.50.

Seattle: Demand good; trend firm; supply ample; $68.40, delivered carlots.

TANKAGE

Cincinnati: Demand good; trend strong; supply ample; 60% digester $70, Cincinnati.

Wichita: Demand heavy; supply about offsets demand; 60% $80, sacked, f.o.b. plant.

Chicago: Demand slow; trend firm; supply fair; 60% protein $75, sacked.

St. Louis: Demand fair; trend steady; supply ample; $68.

Kansas City: Demand fair; trend firm; supply tight; 60% digester $67.50@70.

Louisville: Demand fair; trend strong; supply good; 60% protein $80@85, sacked, up $5.

Ft. Worth: Demand fair; supply sufficient; 60% digester $70, sacked, Ft. Worth.

Omaha: Demand strong; trend stronger; supply fair; $70.

St. Paul: Demand good; supply ample; upward trend; up $4@7 from last week to $72@77.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b. freight equalized with nearest producing plant; bulk $96.

Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent $100, f.o.b. bagged.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

New York: Minimum 42% nitrogen, 262% protein equivalent, $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5¢ lb., f.o.b. north central Texas.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.40, less than 50 lb. $1.45, freight allowed to destination.

WHEAT GERM MEAL

Minneapolis: Market still soft; drop of another $1 in week to $53, jutes.

Buffalo: Demand fair; trend steady to higher; supply fair to poor; commercial grade $64.50, sacked, f.o.b. Buffalo.

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TURKEYS

(Continued from page 1)

The delegates had "mixed emotions." Their pockets were generally jingling with good profits reaped this year, but they were skeptical about profits in 1961.

Most of the discussion in the hotel corridors, dining rooms and private parties concerned the outlook for 1961.

Generally, there was not much agreement about what the future holds. Some feel that there will be a price break next year, while others believe that prices will hold steady and provide operators with their third profitable year in a row.

Although there was much disagreement, Gene George, George's Feeds, Springdale, outgoing president of the federation, seemed to speak for a slim majority. He said:

"I believe the outlook for profits next year appears dim right now. Producers generally made good profits this year, and that usually means they will increase numbers in the following year."

Amel Willingham, Austin, Texas, hatchery operator attending the convention, also holds the view of Mr. George. "I think we will sell turkeys for less in 1961 than we did this year, but I still believe we will make some money."

Predicts More Turkeys

Mr. Willingham, who has 30,000 breeder hens, said he looks for an increase in production.

A number of those at the convention held closely to the view of Jim Ritchie, a Jenks, Okla., turkeyman. He said:

"I would be afraid to predict the future. It depends on too many factors.

"I have been in this business for many years, and I am at a loss to venture a guess about next year."

Mr. Ritchie said, however, that he believes there will be more turkeys raised in 1961 than were produced this year. He said one factor could offset this.

"If prices continue high, it may be an inducement for some operators to sell flocks they originally had planned to hold back for breeder hens."

One grower, who asked not to be quoted by name, said he believes prices will be about the same next year as they have the past two seasons. He said he based his opinion on recent increases in marketings of hens originally tagged for breeders.

But he said he was fearful the new administration might institute some kind of radical farm program that would "upset the apple cart."

Feed Man's Comments

A feed company official, who also asked that his name not be published, held this view: He said he believes feed prices will be lower in 1961 because of huge surplus stocks being piled up in warehouses across the nation.

"If feed prices work lower—and I think they will—we can produce more turkeys at cheaper costs and still make a good profit," he reasoned.

He also was skeptical about the type of farm program the next administration will propose, saying he believes the time is not far away when the farm program is going to have a thorough examination.

This official expressed belief that city residents are about "fed up" with the spending of billions of dollars to support "rich" farmers. He said the support programs help only the "big farmer," not the small producer who actually needs the aid.

Minority Opinion

Joe Salsbury, Bowen Turkey Farm, Fayetteville, held to the minority opinion that 1961 will be a good year—basing his prediction on reduced breeder flocks.

Said Mr. Salsbury: "I especially look for hatchery operators and breeding flock men to have a good profit potential in the first half of the year. And it may be a good year the entire year."

Mr. Salsbury said many breeder hens are headed for market and predicted that poults will be hard to come by in a few weeks.

Farm Mixing

He brought out a point that has been haunting feedmen in recent months — on-the-farm milling and mixing of feeds.

He said Bowen's—which has 8,500 white type hens—recently installed a feed milling unit with a 25 ton daily capacity. The mill, a complete push-button operation, "has helped reduce feed costs because we purchase grain at lower costs and add concentrates bought from feed firms," he said.

Mr. Salsbury said there was another "big advantage" to the mixing of feeds on the farm—it permits the operator to control the type of ration being fed.

"With our mill," he said, "we are able to produce the type and kind of feed we want, when we want it. We are able to add antibiotics as we need them."

Mr. Willingham, the Texan with 30,000 breeder hens, who also recently installed his own feed mill, said he believes on-the-farm milling and mixing has brought him a "substantial saving." He also said he likes the "flexibility feature" which permits him to mix the type of feed he needs at any specific time. He has a 20-ton capacity mill.

More Integration

Although delegates could not agree on the outlook for prices and profits in 1961, they did come to about the same opinion on integration: It is here to stay, and it appears to be increasing steadily.

This seems to be true in Arkansas, Oklahoma and Texas — all over the southwestern area.

Mr. Salsbury commented: "It seems to me that integration is becoming stronger and stronger in Arkansas. Producers are trying to keep it out, but it is a hard job."

Then, he added the clincher: "It just seems that you need a feed connection and a good financial source, and that usually means integration."

Mr. Ritchie reported that integration is increasing rapidly in his Oklahoma area. He said this was especially true in the production of birds for slaughter. And he looks for contract production to increase in breeder hen operations in coming months.

A feedman, who declined to be quoted by name, said his firm will continue to use integration and may go even deeper into the complete cycle of operation.

According to discussions at the convention, the feed companies appear to have their eye on increasing their breeder flock operations as the next step toward complete integration.

Although tie-ups between feed firms and producers have been used, integration has not captured this phase as tightly as it has brooder and range operations.

Breeder Flock Contracts

And, the contracts with breeder flocks vary more than with other phases of production. For instance, some of the feed companies pay 4-5¢ to farm producers who tend their flocks. Others split the profits with the farmer 50-50, while still others give the farmer a 60-40 take of the profits.

Under most conditions, the producer has only his labor and land involved. The feed companies furnish the birds, feed, management and equipment in many cases.

Many large breeder flock operators are still clinging to an independent operation, but some say they have instituted such practices as on-the-farm milling "to reduce costs."

Large numbers of the smaller breeder hen producers have dropped the practice of financing their own flocks for the relative security of a regular paycheck from a feed company or a hatchery operator.

This trend apparently will continue.

Breeder Management

In Texas, Mr. Willingham reported some producers using new methods to induce their birds to produce more eggs and at times when they would be most profitable. Chief advantage of the practice is higher profits.

Out-of-season laying is induced by reducing the length of daylight period to which hens are exposed.

Mr. Willingham said he leaves his hens in darkened houses until noon—the only light they receive is from then until sundown. He says this enables him to hold birds out of production until they are mature.

When birds go into production at 30 weeks, they are old enough and developed well enough that they produce more eggs, he said.

Last season, his hens averaged 70% production and laid an average of 100 eggs.

DEATH

(Continued from page 1)

War I and opened a brokerage office. Later he became associated with the J. E. Rogers Grain Co. and then started his own grain firm in 1933. In 1936, he and a group of associates purchased the grain and feed business of South Texas Grain Co. The name was later changed to Uncle Johnny Mills.

Mr. Archer was a former director of the American Feed Manufacturers Assn., and he also was active in the early history of the Midwest Feed Manufacturers Assn.

The long-time feed man was a past president of the Houston Fat Stock Show. He was also a former national vice president and director of the National Association of Manufacturers. He was a former chairman of the agriculture committee of the Houston Chamber of Commerce, and he was a member of the Research Council of Texas A&M College.

Mr. Archer had been president and a member of the board of directors of Junior Achievement of Houston, Inc.; president of the Better Business Bureau of Houston, and member of the board of directors of the Society for the Prevention of Cruelty to Animals.

He was also a member of the board of directors of Carrier Corp.

In 1956 Mr. Archer was one of three Houston laymen honored by the National Conference of Christians and Jews for their efforts to strengthen inter-religious cooperation and understanding.

He is survived by his wife, Mrs. Eleanor Miller Archer; a son, William R. Archer, Jr.; a daughter, Mrs. Barbara Archer Bryant; a brother, C. B. Archer, and five grandchildren.

Minnesota Renderers Hear R. E. Bergman

MINNEAPOLIS—R. E. Bergman, director of feed and fertilizer control division of the state of Minnesota, addressed the Minnesota State Renderers' group at a meeting in the Normandy Hotel here.

The main topic of discussion was quality control of renderers' products; what is being done to increase this quality; and new ideas and concepts of quality control as practiced in other areas of the U.S.

The renderers' group consists of representatives from practically all independent rendering operations throughout Minnesota. This group has been meeting on a scheduled basis for the past 18 months in an endeavor to promote quality production and continued wide acceptance of its manufactured products.

It is the goal of this group to invite representatives from many feed companies in the state to meet with them for the mutual opportunity of airing questions and problems peculiar to the renderers' products.

TENNESSEE

(Continued from page 1)

Johnston were featured in a panel discussion concerning quality control.

"Our obligation is to the feeder," Mr. Johnston said. "We must see to it that the feed we produce contains the proper amounts of quality ingredients prepared and mixed properly. And this product is still our responsibility until it is consumed by the animal, even though it may be moved from our mill to a warehouse or to the feeder's bins."

Mr. Johnston pointed out the importance of watching incoming ingredients. He cited several problems in this regard: (1) The shipper does not always ship what is bought. (2) There is a problem of separation of light from heavier particles in a product like soybean meal. (3) Disease organisms that can accompany a product like poultry by-products.

Checking on quality, Mr. Johnston said, is done by his firm's own laboratory supplemented by using other laboratories on a regular basis to check the accuracy of the firm's own tests.

In the area of medicated feeds, Mr. Johnston said his firm has changed much of its equipment over the past few years to avoid contamination. "We now use drag conveyors, drop-bottom mixers and a completely separate mixer for certain medicated feeds," he said.

The importance of proper blending and mixing in getting a quality feed was also stressed by the speaker.

As owner of a small mill, Mr. Hudson noted that his firm does not have laboratory facilities to make all the tests. "For that reason we buy only from proved first-rate suppliers to assure ourselves of the best ingredients," he said.

Mr. Hudson recalled an experience his company had with corn to illustrate why it considers ingredient quality so vital. Treated seed corn from a seed corn company was sold for feeding purposes. This corn could be used in certain types of feed without harmful results. However, in changing hands a number of times and being diluted it eventually found its way into a laying ration with disastrous results. Hens went out of production. Or when they did lay, the eggs had no shells.

"Although we and our immediate supplier were completely innocent of any wrong-doing, it was still hard to explain to the customer," Mr. Hudson said.

Mr. Cathey said that the state is constantly checking on feed and feed ingredients sold direct to farmers to make certain of the quality.

"We have an obligation to the farmer to see to it that the feed he gets contains what the tag says it does. When we find a feed manufacturer who shows a willingness to cooperate, but still falls down in meeting the tag specifications, we will help him check his basic raw materials," Mr. Cathey said.

Dr. Bishop stated that future progress of the feed industry in Tennessee will be made by using the tools available today based on information of the past. He cited the growth of the industry in the state—3½ times larger than 1935—but said that future growth will come only if certain conditions are met.

In dairying, for example, Dr. Bishop noted that Tennessee farmers must be able to compete and make money if they are to stay in business and grow. "Can our farmers who produce an average of 4,000 lb. of milk per cow when the national average is 6,000 lb. continue to compete?", he asked.

There must be an increase in per cow production, he said. "And the dairy farmer must have a good forage program before he can even utilize your feed efficiently," Dr. Bishop told the feed men. He called for cooperation of all to make certain that the Tennessee dairy farmer improves his production efficiency and thus stays in business.

Dr. Bishop listed some of the research projects being worked on at the University of Tennessee aimed at improving the efficiency of livestock operations in the state.

Potentiation

Potentiation of antibiotics in feeds was explained by Dr. Bryant. He showed with slides how the level of antibiotics in the blood of poultry is raised substantially by reducing the calcium content of the diet. He also pointed out that with a 0.8% calcium content, there were no adverse effects compared with a diet containing the common 1.1% calcium. Broilers grew as fast and utilized feed as efficiently, he said.

Dr. Bryant also outlined the method used in "top dressing." By feeding a feed very low in calcium content once a day, the antibiotic level in the blood is stepped up to a high peak, resulting in greater killing power of the same amount of antibiotic. "This is an effective method of fighting disease problems," Dr. Bryant said.

"How the Bag Industry Serves the Feed Industry" was the topic of Mr. Werthan and Mr. Langston.

"Bags serve to protect the feed from the elements, to keep it fresh, to prevent separation of ingredients and to properly identify it," Mr. Werthan said. "Attractive designing and printing enhance the inherent quality of the feed itself."

Mr. Werthan noted that the bag industry has worked with cotton goods and burlap suppliers to maintain and improve quality in the raw material with respect to tensile strength, thread count and uniform weight of fabrics. The use of dress-print bags and similar specialty items has helped to promote the demand for feed and has also rendered a useful service to housewives, the speaker said.

The bag industry has worked successfully to keep the duty on burlap at its present level and to hold down ocean freight rates, Mr. Werthan said. The industry has also contested on numerous occasions attempts of domestic carriers to increase freight rates on bags.

In recent years, Mr. Werthan continued, "the textile bag industry has made available on a greatly expanded basis return bag programs. This type of program has been most effective where burlap bags are employed. In certain types of operations, particularly those of a volume nature, such a program has enabled the feed industry to deliver its products to the ultimate consumer at a net lower price than in the case of one trip bags, and in fact at a net lower price than in the case of bulk shipments where all things including capital expenditure and customer's shift from one dealer to another are taken into consideration."

Mr. Langston explained further the returnable bag programs. Where feed manufacturers want to go on such a program, he said, they merely write their customers a letter telling them to which bag company the customer should return the bags. By bringing the bag company into the operation as a middle man, the feed company does not have to negotiate on establishing the worth of returned bags. Also, the bag company is set up to thoroughly clean, fumigate and repair bags for return to the feed manufacturer, Mr. Langston said.

Feed Control

A group of government officials participated in a panel on state and federal requirements for feed ingredient identification and labeling. Panelists were Mr. Holman, Mr. Mowery, Mr. Cathey and Mr. Alfend.

Mr. Mowery outlined the methods used and problems encountered in analyzing feed samples. With testing procedures for protein, fat and fiber, it is important that the Association of American Feed Control Officials procedures be followed closely so that everyone is using the same methods, he said. Committees of the AAFCO are also working continually to properly name and test new products that are introduced, Mr. Mowery said. In this work, industry is very helpful, he noted.

"While it is our job to protect the consumer, our services also help protect the legitimate feed manufacturer against the unscrupulous operator," Mr. Mowery concluded.

The importance of farmers' understanding tag directions and following those directions was stressed by Mr. Holman. "Feed dealers can be of considerable service in this regard, making sure that they are stocking feed that the farmer can use to replace a medicated feed that must be withdrawn before marketing," Mr. Holman said, noting that they occasionally find dealers who do not even offer a substitute feed.

Danger to the feed and food industry from the public's loss of confidence in the quality and safety of food was cited by Mr. Alfend.

"The public is alarmed by food faddists who for various reasons try to convince people that food they eat nowadays is endangering their health. It is our responsibility to assure them that we are taking all the precautions necessary. We have the laws. Now all we need is an industry that is fully conscious of the problems and that will do what is necessary to solve those problems. If we cannot assure the public that their food supply is safe, it will do harm to us all," Mr. Alfend said.

Mr. Alfend explained how FDA works with state control officials and what procedures can be followed in violation cases.

"The feed manufacturer has become a purveyor of drugs as agriculture has come of age," the FDA official said. "We can say we won't use any of the drugs—and go out of business—or we can accept our responsibility."

During the business session, Mr. Cathey explained to the feed manufacturers that several changes in the state feed regulations were being considered. However, he said that the feed men would be consulted before any changes are made.

TENNESSEE DIRECTORS—Officers and directors of the Tennessee Feed Manufacturers Assn. are shown here at the recent 11th annual convention of the association held in Nashville. From left to right are: Front row, Clyde Cathey, director, Division of Feeds, Seeds and Fertilizers, Tennessee Department of Agriculture; Charles H. Warfield, general counsel and executive secretary of the association; D. B. Gambill, Barry-Carter Milling Co., Lebanon, president; Bruce Ballew, Farmers Milling & Elevator Co., Colliersville, vice president; Lehman A. Keith, Hermitage Feed Mills, Nashville, vice president; second row, George P. Moseley, Quaker Oats Co., Memphis; W. D. Hudson, Jr., Cumberland Milling Co., Clarksville; Leonard Dienell, Allied Mills, Inc., Memphis; J. G. Johnston, Security Mills, Inc., Knoxville; back row, M. E. Staed, Ralston Purina Co., Nashville; C. T. Whitworth, Nutrena Mills, Inc., Memphis, outgoing president; Robert Moon, American Cyanamid Co., Goodlettsville, and D. J. Paul, Buckeye Cellulose Corp., Memphis. Not present for the photo was W. B. Carden, Quaker Oats Co., Chattanooga, a vice president.

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Tennessee Feed Men Elect New Officers

NASHVILLE, TENN.—New president of the Tennessee Feed Manufacturers Assn. is D. B. Gambill, Barry-Carter Milling Co., Lebanon. He was elected to succeed C. T. Whitworth, Nutrena Mills, Inc., Memphis, at the convention of the association held here.

Officers reelected included: W. B. Carden, Quaker Oats Co., Chattanooga, vice president, East Tennessee; Lehman A. Keith, Hermitage Feed Mills, Nashville, vice president, Middle Tennessee; Bruce Ballew, Farmers Milling & Elevator Co., Colliersville, vice president, West Tennessee, and Charles H. Warfield, general counsel and executive secretary.

Elected as new directors were Leonard Dienell, Allied Mills, Inc., Memphis; J. G. Johnston, Security Mills, Inc., Knoxville, and D. J. Paul, Buckeye Cellulose Corp., Memphis.

Those who continue as directors are M. E. Staed, Ralston Purina Co., Nashville; George P. Moseley, Quaker Oats Co., Memphis; W. D. Hudson, Jr., Cumberland Milling Co., Clarksville; Robert Moon, American Cyanamid Co., Goodlettsville, Tenn. Rudy Langston, Langston Bag Co., Memphis, serves on the board as an ex-officio member during the coming year.

CLEARANCE

(Continued from page 4)

rates with Amprol to be "excellent." He said Maryland studies showed male birds weighed 3.39 lb. at eight weeks with a conversion of 1.95 lb. of feed per pound of gain. At the Merck farm, where commercial feeds were used, conversion rates of 2.15 to 2.3 lb. of feed per pound of gain were recorded for birds weighing 3.4 lb. at eight weeks.

Merck recommends a concentration of 0.0125% Amprol in feed for coccidiosis conditions normally encountered in the field, and up to a level or 0.025% when extreme conditions are encountered.

The announcement cited tests in which it was reported that the coccidiostat was effective in combatting the various species of coccidia, including Eimeria tenella and E. necatrix (called the "most damaging"), E. maxima, E. acervulina and E. brunetti. It also was stated that efficacy trials have shown that Amprol "is more potent than other coccidiostats in controlling the most pathogenic species of coccidia and in protecting chickens against mixed coccidial infections."

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
October 1	1,068	433	529	581	102	615	1,552	1,903
October 8	1,037	358	778	589	68	643	1,429	1,838
October 15	908	508	698	520	40	518	1,596	1,752
October 22	993	362	595	643	78	602	1,312	1,980
October 29	1,016	399	678	418	78	568	1,447	1,797
November 5	1,053	351	687	654	100	535	1,480	1,801
November 12	1,022	427	808	689	93	551	1,372	1,876
November 19	1,024	394	783	719	111	622	1,514	1,762
November 26	1,039	403	871	645	108	593	1,620	1,697
December 3	1,098	418	828	747	97	673	1,636	1,760

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
October 1	678	423	2,844	303	5,946	202	3,085	1,880
October 8	809	326	2,873	326	5,694	202	3,084	1,884
October 15	713	356	2,809	317	5,750	198	3,099	2,027
October 22	684	385	2,746	302	5,624	228	3,053	2,057
October 29	714	353	2,820	308	5,627	205	3,156	2,094
November 5	767	400	2,890	284	5,923	178	3,132	2,179
November 12	867	327	2,876	319	5,968	210	3,110	2,196
November 19	928	294	2,993	339	5,974	186	3,133	2,198
November 26	921	335	2,974	306	6,805	209	3,008	2,244
December 3	913	372	3,063	300	6,795	217	2,868	2,368

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	Total 22 areas 1959
October 1	2,825	356	1,623	216	181	1,109	28,454	24,612
October 8	2,865	346	1,615	256	208	1,033	28,261	24,674
October 15	2,884	319	1,635	218	214	1,024	28,103	23,755
October 22	3,022	337	1,608	263	137	892	27,903	24,066
October 29	2,998	341	1,660	182	158	1,051	28,068	25,712
November 5	3,222	345	1,642	262	126	1,036	29,534	26,271
November 12	3,375	371	1,739	280	194	1,117	29,787	26,884
November 19	3,328	385	1,760	290	210	1,114	30,061	27,133
November 26	3,327	362	1,730	205	182	1,108	29,692	27,416
December 3	3,423	280	1,947	301	206	1,234	30,546	28,868

ARKANSAS

(Continued from page 6)

down, we can limit the amount of energy he must use. When we do this, we will permit the bird to make faster and more efficient gains.

"This will be the next important breakthrough in turkey nutrition," he said.

Calcium Research

Dr. Stephenson reviewed recent findings concerning calcium requirements in turkey rations, saying he believes calcium levels can be reduced to 0.8%.

He said this is important because to obtain the previously recommended level of 2%, feed men had to add about 5% limestone, which reduced the total energy in the feed a bird consumed.

He said calcium provides no energy and that it is destructive to antibiotics used in feeds or to treat birds.

"If we are feeding high levels of antibiotics, we need the smallest possible amount of calcium because of its destructiveness to antibiotics."

Dr. Stephenson reported that the University of Arkansas is increasing its turkey research program on a 260-acre farm purchased recently specifically for this purpose.

Two new buildings—a 200 x 26-ft. concrete block brooder house and the other a large pole-type structure—have been constructed on the farm. And there are plans to add four others as soon as possible.

The brooder house is divided into 10 pens containing 400 sq. ft. of floor space each—particularly efficient for nutrition research.

The pole house is being used for research in semen, artificial insemination and other problems related to breeding. Dr. Stephenson said work is being done in an effort to find new ways of obtaining higher egg production and a higher percentage of hatchability.

He said that a turkey will efficiently turn almost any kind of nutrient into growth or meat, but the big problem is inducing birds to eat certain feeds.

100 Million Birds

The idea that the economy can safely handle up to 100-million birds annually, and still return the producer a good profit, was advanced by Oswald Franz, Mammoth Springs, operator of processing plants at Green Forest and Mammoth Springs.

He said marketings of 100-million birds could be done successfully by employing good practices.

Citing figures which showed that there is now a larger cold storage supply of turkeys than at the same time last year, he said:

"The cold storage picture had a bearish effect on the market, and it produced good movement and good prices. If we had anything but this bearish effect, we would not have moved and sold as many birds. I believe it held prices where they have been all year."

The figures showed that a steady increase in frozen birds has produced some 50 million more pounds than at the same time a year ago. As of the last report, Mr. Franz said there were 270 million pounds of turkey in storage, compared to only 220 million pounds in 1959.

He said the market has held steady because marketings were started earlier than last year due to what producers considered "satisfactory prices."

"Week after week," he said, "we were further into this year's crop than we realized. Because of a number of factors, birds were sold earlier than in the past."

Record Turkey Consumption

He said that Americans are now eating more turkey than ever before, citing Thanksgiving sales figures to prove his point. He said increased consumption has given the industry a tremendous boost.

But Mr. Franz warned of pitfalls ahead. "Don't start trying to get more money for your birds on the present market. You could harm the situation by asking 0.5¢ lb. more than you really intend to take.

"There are still enough birds left around to completely ruin 1961 prices," he cautioned.

He also warned against "selling your freedom" by government intervention, noting that the new administration may not handle the agricultural program in the same manner as the outgoing one.

Mr. Franz said a number of practices make it possible for producers to market their birds earlier than in the past. He listed them as new strains of birds, new and improved nutritional factors and earlier poult starts.

He said some growers are now raising birds for 0.5¢ lb. less than they did last year.

"We will have a good year next year if we use sense in our marketing programs," Mr. Franz concluded.

New Poultry Markets

One of the most pleasing parts of the program was the report on new and enlarging foreign markets for poultry products.

The report was delivered by Joseph P. Parker, Washington, D.C., chairman of the International Trade Development Committee.

He outlined the growth of the export program and explained the operation of the overseas promotional unit. Mr. Parker called increased exports a "good example of cooperation between the government and the poultry industry."

The group was told that since 1957, total exports have grown from virtually nothing to more than 97 million pounds.

Mr. Parker warned, however, that the American poultry industry must continue to improve its methods of processing, packaging and promoting. He said that a number of European firms have been emulating U.S. methods and making their products more attractive than ever before.

Turkey Diseases

Jim Oren, Charles City, Iowa, educational manager for Dr. Salsbury's Laboratories, spoke on major turkey diseases and outlined some precautions that can be taken to reduce death losses.

He listed the diseases—in the order of their occurrence—as bluecomb, air sac, blackhead, coccidiosis, fowl typhoid and pullorum, cholera, erysipelas and staph infections.

Mr. Oren said some researchers feel that 60% of all death losses under five days of age are due to poor management practices. He predicted that government processing plant inspections will become more rigid and that producers will need to do a better job of management to reduce rejections.

Officials of the National Turkey Federation also addressed the meeting, and a panel discussion featuring a question and answer session was held in the closing session.

Export Group Meets

A meeting of the committee on trade barriers and government action of the International Trade Development Committee of the poultry industry was held to discuss ways and methods of eliminating trade barriers.

A spokesman said the group took up the problem of barriers which discriminate against U.S. poultry products.

Attending the meeting were Sen. Fulbright; a representative of Sen. John Sparkman (D., Ala.), chairman of the Senate Small Business Committee, and representatives of the U.S. departments of state, agriculture and commerce.

A silent tribute was paid to the late Raymond J. Higgins, Hot Springs, southern regional director of sales for General Mills, Inc., who was to have been general chairman of the convention. Mr. Higgins died unexpectedly two weeks before the convention opened.

Turkey Show

In the live turkey show, Howard Gay, Lowell, exhibited the champion tom, and Bobby Dale Parson, Springdale, showed the champion hen. Exhibitors were competing for $200 in cash prizes.

The champion tom was sold at auction to the Ralston Purina Co., Rogers, for $455, and Gland-O-Lac Co., Omaha, purchased the champion hen for $288.

Mr. Parker; Chester C. Housh, chairman finance committee of the International Trade Development Committee associated with East Point Turkeys, Inc., Elkton, Va., and Harold Williams, Chicago, president, Institute of American Poultry Industries, were presented with "Arkansas traveler" certificates.

Firms sponsoring commercial exhibits at the meeting were General Mills; Harper's Veterinary Supply, Morrilton, Ark.; DeWitt's Turkey Hatchery, Waxahachie, Texas; Dr. Salsbury's Laboratories, Charles City, Iowa; Waite's Turkey Hatchery, Berryville, Ark.; Crain's Poultry Service; John J. Carroll Co., Fayetteville, Ark.; Dodgen's, Ozark, Ark., and Merck & Co.

TEXAS FIRM

(Continued from page 6)

waiting for him when he gets to the mill—accurately mixed, weighed, and sacked, or in bulk if preferred."

Designer of the mill for the Houston architectural-engineering firm of Cameron Fairchild & Associates was C. H. Van Eman, who for a number of years was in charge of feed mill design for Anderson, Clayton & Co.

Candoo Construction Co., Houston, holds the construction contract for the mill.

The mill will be constructed of reinforced concrete and structural steel. Its seven grain storage tanks will be 42 ft. high and 12 ft. in diameter, holding 71 tons each.

Sugarland Industries, Inc., has been operating a feed mill under the name of Sugar Land Feed Co. since 1915.

"The new mill will have increased production and storage capacity, and will enable us to meet present daily requirements for scientific feeding methods followed by most dairymen and ranchers," Mr. James stated.

The new mill will be operated under the name of Sugar Land Feed Co. and various formulas will be produced under the Mixtrite brand, he added.

Sugarland Industries, Inc., is a diversified enterprise engaged in farming and ranching, owning and operating a shopping center, operating a farm machinery franchise and an alfalfa dehydrating plant and supervising an automobile dealership, telephone company and two residential development companies.

BARROW

(Continued from page 7)

it was the "policy of the restaurant to provide special dishes for discriminating guests."

The company's district sales managers from across the country were reported to have been so enthusiastic over the young lady and her prize pig that they each paid $1 to have their picture taken with her and the pig and Mr. Honegger. Colleen collected $90 in Christmas cash to be spent as she chooses. Previously she had received over $5,000 from the sale of her barrow and prize money from the show, all of which went into a college education fund.

The girl later visited the Honeggers' mill where the feed for her pig was made and then called on several businessmen in downtown Fairbury. Officials of the National Bank of Fairbury made arrangements to have the pig displayed in the bank lobby for a day.

Honegger officials say that they purchased the pig in order that they might display the superior animal to youth groups interested in agriculture throughout several states, as a means of stimulating a greater interest in scientific feeding methods.

While Honeggers' paid a record $4,715 for the pig, the officials claim that such encouragement to the youth of our farm families is, in their opinion, a sound investment in the future of animal agriculture. Company officials go on to say that the "farm youths of today will be our superior farmers of tomorrow, and Honeggers' likes to feel that the unusual feeding records and performances of today will be the standards of tomorrow."

Mr. Dickey, in speaking before the Honegger sales meeting, said that his company did not feel that prize winning animals displayed by 4-H, FFA and other youngsters at International Live Stock Shows should wind up as fancy meat dishes in night clubs and saloons. He went on to say that business firms should join hands in displaying these champion animals far and wide as an evidence of the opportunities for young people in animal agriculture.

MARKETS

(Continued from page 2)

gard to the low ebb to which feeder and country feed store inventories had dwindled.

Trade has not yet reached a point at which overtime has become a uniform experience but, nevertheless, there has been quite a little of it.

The second cold snap of the 1960-61 winter has just hit this area after an unseasonably warm November for the most part. Unquestionably, what had been happening to soybean meal through the fall months from a price standpoint had done much to discourage the rank and file of the feed trade. However, the recent $5 ton or more recovery in that commodity seems to have done much in restoring confidence and dissipating much of the gloom that had enveloped the feed trade from one end to the other. In addition, significance has been attached to the fact that the broadening in demand has not been concentrated in one type of feed but rather has spread to all lines, except turkey feeds.

Pacific Northwest

The demand for dairy and livestock feed generally expanded during the past week mainly because of colder temperatures that increased requirements for heavy supplemental feeding throughout Oregon, Washington and Idaho.

Feedstuffs supplies appeared to be plentiful, but current offerings of some important items were being held more firmly and trade sources indicated there was no evidence of distressed offerings.

Pacific Northwest alfalfa hay demand also expanded during the trading period, but prices were largely within the previous ranges on a comparable grade basis. Hay offerings continued to be adequate to plentiful from most producing districts.

Wheat millfeed listings climbed $1 ton during the week as a result of tighter offerings and a dependable demand from mixers and local feeders. There also was a scattered call from California markets for local millfeed and millers reported the daily offerings were readily cleaned up.

Soybean meal quotes gained $2.50 ton during the week while linseed meal prices gained $1 ton, but domestic copra meal finished about $1 lower in the face of dull trading.

Alfalfa meal values were stronger, with dehydrated kinds selling $1 ton higher. Corn and milo prices closed $1-$2 ton higher on an eastern shipment basis while prices held unchanged and weak for barley and oats.

Mountain States

With the advent of cold, winter weather in the Rocky Mountain states cattle are moving into feedlots and volume of feeds is moving up.

Prices are strong and demand is good, dealers report. This is the feed market dealers have been looking for but for this area it has been late in coming because of the ideal weather on the ranges. Now, however, snows are deep and heavy all through the area.

Ohio Valley

Under the impetus of cold and rainy weather during the last week, a stronger tone in sales of formula feeds has been noted, although it has not yet developed sufficiently to affect production schedules of feed manufacturers to any extent. Contributing to the increasing note of optimism is the fact that muddy feed lots on hundreds of valley farms are strong inducements for undercover feeding of farm animals.

The stronger market tone was being reflected in an upward price movement for a variety of ingredients, including meat and bone meal, up $2.50 ton; tankage, up $3.50; millfeeds, up $2@3 ton, and soybean oil meal, up $6 ton.

Activities in area poultry and egg wholesale markets continued at a good level, with prices either remaining steady or moving up slightly. A brisk poultry movement is anticipated during the upcoming pre-Christmas season.

South Central

Feed manufacturers in this area have had good business this week, although some say that sales are not quite up to the level of the week earlier. Those with light sales are not able to advance a reason for the easing in demand, but they do think that it is a temporary development. Despite this, business at all mills is heavy enough to support a strong five-day operation and, on occasion, some overtime runs are necessary.

All types of formula feeds are reported to be moving at a satisfactory pace. The best volume continues to be provided by hog supplements and cattle feeds but egg rations are making a good showing also. Sales on this item have been bolstered by a steady upward trend in cash eggs. However, this prop seems to be losing some of its strength. Egg prices turned down this week after being 7-20¢ above the year earlier level.

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Trade, Bank Credit For Broilers Shows Reduction in South

ATLANTA — Outstanding credit of both feed manufacturers and banks for broiler production appears to have been reduced during October in the sixth federal reserve district, according to reports received by the Federal Reserve Bank of Atlanta.

Although the amount of trade credit for broiler production outstanding at selected feed manufacturing plants declined modestly in October of this year, it slightly exceeded outstandings in the same month a year earlier, the bank's research department said.

The total of new loans for broiler production at reporting banks in October was down slightly from September and down sharply from year-earlier levels. However, the bank—which serves Alabama, Florida, Georgia, Louisiana, Mississippi and Tennessee—reported that new bank loans direct to producers increased from September to October this year.

The cutback in feed manufacturers' outstandings during October was proportionately greatest for trade credit issued directly to producers. On the other hand, the bank noted, a slightly larger volume of trade credit was outstanding at feed plants in October, 1960, than in October, 1959, and especially large year-to-year gains occurred in direct-to-producer credit.

The monthly report from Atlanta on broiler credit trends related that broiler placements in five district states were unchanged from September to October, 1960, but the October placements were sharply above those a year earlier. Growers also increased total broiler placements in the five states in November.

Because bank credit advanced to dealers and growers for broiler production apparently decreased during October, a month in which broiler placements were the same as in the month before and sharply above the same month a year earlier, the Atlanta bank concluded that "direct bank financing of broiler production through dealers and growers may not be supporting the year-to-year expansion in broiler placements."

Broiler growers in five of the district's states received an average price of 15.4¢ lb. at the farm for their broilers in October, 1960, about the same price received in September this year. The October price, however, exceeded the price a year ago by about 1¢.

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